THE LANCET.

A Journal of British and Foreign Medicine, Surgery, Obstetrics, Physiology, Chemistry, Pharmacology, Public Health, and News.

TELEGRAPHIC ADDRESS—LANCET, WESTRAND LONDON TELEPHONE NUMBER—GERRARD 5356

No. VI. OF VOL. II., 1913.
No. 4693. Vol. CLXXXV. LONDON, SATURDAY, AUGUST 9, 1913. Pp. 160—Price 6d.

TO ADVERTISERS.

The STUDENTS' NUMBER of THE LANCET
WILL BE ISSUED ON FRIDAY, AUGUST 29TH.

Advertisements should be forwarded without delay to the Office, 423, Strand, W.C.

Reprint Edition. 1028 pages, richly illustrated. 30s. net.

INDEX of DIFFERENTIAL DIAGNOSIS of MAIN SYMPTOMS.
Edited by HERBERT FRENCH, M.A., M.D.
TOGETHER WITH TWENTY-ONE SPECIAL CONTRIBUTORS.
"May be said to represent the last word as to limits of diagnostic power at the present time ..... illustrations are of a uniformly high merit, and aid materially ..... of Dr. French's work, both as editor and contributor, we cannot speak too highly. ..... This remarkable index."—BRIT. MED. JOUR.
Bristol: J. Wright & Sons Ltd. London: Simpkin & Co. Ltd.

NERVES AND THE NERVOUS—Includes a Chapter on Psycho-Therapy.—By EDWIN L. ASH, M.D.Lond.
NURSING MIRROR says:—"We can strongly recommend....."
New Ed., 3s. 6d. net. Mills & Boon, 49 Rupert Street, W.

THE FOOD FACTOR in DISEASE, including the Pathology and Treatment of Bilious Attacks, the Paroxysmal Neuroses (Migraine, Asthma, Angina Pectoris, &c.), Gout, High Blood-pressure, &c. By FRANCIS HARE, M.D., Consulting Physician, Brisbane Hospital. For abstract see THE LANCET review—Feb. 17th, 1906, pp. 453 to 455.—Longmans, Green & Co. In two volumes. Price 30s. net.

Third Edition. Pp. viii.+134. With 22 Illustrations. Price 3s. 6d. net.

ANÆSTHETICS. By J. BLUMFELD, M.D., Senior Anæsthetist to St. George's Hospital.
"A truly excellent manual."—LANCET.
"Dr. Blumfeld's handbook of anæsthetics leaves little to be desired. It is packed with useful information and practical hints."—BRIT. M. J.
London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

THE TECHNIQUE AND RESULTS OF
RADIUM-THERAPY in MALIGNANT DISEASE. By H. DOMINICI, M.D., and A. A. WARDEN, M.D., Paris. Reprint of Demonstration given at 76th Annual Meeting of British Medical Association, London, July, 1910, with additional Plates and more recent Notes, March, 1912.
London: J. & A. Churchill. 1912. Price 2s. net.

Fourth Edition, with 57 Illustrations, including numerous original Photo-micrographs. 10s. 6d. net.

THE NUTRITION OF THE INFANT.
By RALPH VINCENT, M.D.
London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden

Now Ready. Pp. xi. + 269. With 3 Charts. 5s. net.

ON ALCOHOLISM: Its Clinical Aspects and Treatment.
By FRANCIS HARE, M.D., Medical Superintendent of the NORWOOD SANATORIUM, Beckenham.
"Marked by candour, common sense, and moderation ..... likely to become the standard text-book."—BRITISH MEDICAL JOURNAL.
London: J. & A. Churchill, 7, Great Marlborough-street.

THE INDICATIONS for WIDELY RESECTING the BLADDER WALLS in VESICAL GROWTH.
With 4 Plates. Cloth. 3s. 6d. net.
By E. HURRY FENWICK, F.R.C.S.,
Professor of Urology at the London Hospital;
Vice-President of International Society of Urology, and President to its Second Congress.
New York.
London: Adlard & Son, Bartholomew-close.

By ERNEST CLARKE, M.D., B.S., F.R.C.S.Eng.,
Senior Surgeon to the Central London Ophthalmic Hospital; Consulting Ophthalmic Surgeon to the Miller General Hospital.

ERRORS OF ACCOMMODATION AND REFRACTION OF THE EYE.
Third Edition. Pp. x. + 228. With 86 Illustrations and Coloured Plates. Price 5s. net.
"This volume is the very best of the class that goes into everything with care and thoroughness. ..... The book merits the highest commendation."—CANADA LANCET.
London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

With 10 Plates and 17 Charts. Royal 8vo. 6s. net.; post free, 6s. 4d., abroad, 6s. 7d.

THE BACTERIAL DISEASES OF RESPIRATION AND VACCINES IN THEIR TREATMENT.
By R. W. ALLEN, M.D., late Clinical Pathologist to the Mount Vernon Hospital for Diseases of the Chest, &c.
"We recommend this work cordially to all who are interested in vaccine therapy."—DUBLIN JOURNAL OF MEDICAL SCIENCE.
London: H. K. Lewis, 136, Gower-street, W.C.

H. K. LEWIS'S PUBLICATIONS.
See Advertisements, Pages 3, 5, and 7.

INTERNATIONAL MEDICAL CONGRESS.
SEE STAND 90
AT THE EXHIBITION.
London: H. K. Lewis, 136, Gower-street, W.C.

Now Ready. With Frontispiece in Colour and 106 Illustrations. 15s. net.

RESEARCHES ON RHEUMATISM.
By F. J. POYNTON, M.D. Lond., F.R.C.P.,
Senior Physician to Out-patients, University College Hospital; and
ALEXANDER PAINE, M.D. Lond., D.P.H. Eng.,
Director of the Cancer Hospital Research Institute.
London: J. & A. Churchill, 7, Great Marlborough-street.

WORKS by Dr. HARRY CAMPBELL.
HEADACHE, ETC.
FLUSHING AND MORBID BLUSHING.
DIFFERENCES IN THE NERVOUS ORGANISATION OF MAN AND WOMAN.
H. K. Lewis.
ON TREATMENT. Third Impression.
Baillière, Tindall.

"ROSE and CARLESS' SURGERY is a trustworthy guide for the student and the practitioner."—LANCET.

Eighth Edition. Pp. xii. + 1406. With 12 coloured Plates and 581 Illustrations. Price 21s. net.

London: Baillière, Tindall & Cox, 8, Henrietta-street, Covent Garden.

Third Edition. With 126 Illustrations. Price 14s. net.

DISEASES of the NOSE and THROAT.
By HERBERT TILLEY, B.S., F.R.C.S.,
Surgeon Ear & Throat Department, University College Hospital, London.
LANCET:—"It is clearly written, well illustrated, and readable, and is a book to which students and practitioners of medicine may turn with confidence."
BRITISH JOURNAL OF TUBERCULOSIS:—"An ideal manual for the practitioner. ..... The sections dealing with affections of the nose and its accessory cavities are particularly excellent and admirably illustrated. Tuberculosis of the larynx (section) is one of the best of its kind ever written."
H. K. Lewis, 136, Gower-street, London.

By J. S. KELLETT SMITH, F.R.C.S.Eng.

LATERAL SPINAL CURVATURE AND FLAT FOOT, AND THEIR TREATMENT BY EXERCISES.
"We may say at once that he has carried out his idea admirably. ..... This is eminently a book suited for the general practitioner wishful to treat the slighter forms of scoliosis or pes planus."—LANCET.
5s. 6d. net. 82 Illustrations. Bristol: J. Wright & Sons. Ltd.

By FREDERICK J. McCANN, M.D.Edin., F.R.C.S.Eng.,
Surgeon, Samaritan Free Hospital for Women, London, N.W.

CANCER OF THE WOMB: ITS SYMPTOMS, DIAGNOSIS, PROGNOSIS, AND TREATMENT.
Fully illustrated, 20s. net.
LIVERPOOL MEDICO-CHIRURGICAL JOURNAL.—"Cancer of the Womb, by F. J. McCann, is a book that can be recommended alike to the general practitioner and the specialist. Written in a fluent manner, it embodies the ripe experience of a renowned operator, trained observer, and patient investigator."
EDINBURGH MEDICAL JOURNAL.—"The book is one of very great merit; it will be read with interest both by the specialist and general practitioner as an authoritative exposition of the important subject with which it deals."
PRACTITIONER.—"Dr. McCann has produced a valuable work which deserves to be widely known."
ST. BARTHOLOMEW'S HOSPITAL JOURNAL.—"The plates are excellent. This is a book we can thoroughly recommend."
London: Henry Frowde and Hodder & Stoughton.

"COFECTANT" – "ASEPSO"

(Cook's Disinfectant) (Cook's Antiseptic Soap)

As Prophylactic Agents against Infection and as safeguards to yourself and your patients against sepsis, these preparations are invaluable.

"COFECTANT" (Cook's Disinfectant) is non-toxic, and its continued use causes no unpleasant condition of the skin. It has no corrosive action on the most delicate mucosa when used in the proper and efficient dilutions, and is the most powerful and reliable disinfectant and germicide offered to the profession.

"ASEPSO" (Cook's Antiseptic Soap) consists of *active* Biniodide of Mercury incorporated with a pure soap. It is always ready for use, always efficient, and for freeing the hands from all traces of septic matter it is unequalled. While being more reliable than perchloride it is also *pleasant to use.*

SAMPLES AND FULL PARTICULARS ON APPLICATION.

EDWARD COOK & CO., Ltd. (The Soap and Disinfectant Specialists), BOW, LONDON, E.

Lysol

FOR ASEPTIC RESULTS.

Superior Cleansing.
Antiseptic & Disinfectant.

The special solvent action of Lysol on grease, mucus, &c. ensures removal of accumulated secretions together with their adherent germs and other contaminations.

A Handy Sample Bottle free to Surgeons on receipt of Professional Card.

Lysol is not a sticky coal-tar Emulsion composed of crude carbolic and unrefined cresols, but an absolute cleansing antiseptic. In the strength of 1 in 100 it has no irritating action on the skin, and wounds invariably heal well after its application.

As a Dentifrice, Mouth-Wash, or Gargle use 3 to 5 drops in a tumblerful of water.

Of all Chemists, in Bottles at 7½d, 1/9, & 3/-.

CHAS. ZIMMERMANN & CO. (Chemicals), Ltd., 9 & 10, St. Mary-at-Hill, LONDON, E.C.

THE LANCET.

No. 4693. Vol. CLXXXV. LONDON, SATURDAY, AUGUST 9, 1913. Pp. 160.

CONTENTS.

The whole of the literary matter in THE LANCET is copyright.

PRESIDENTIAL ADDRESS delivered before the Seventeenth International Congress of Medicine on Aug. 6th, 1913, by Sir THOMAS BARLOW, Bart., K.C.V.O., M.D., F.R.S., Physician Extraordinary to His Majesty the King; President of the Royal College of Physicians of London 363

ADDRESS IN MEDICINE on Medical Prognosis: its Methods, its Evolution, its Limitations. Delivered at the Seventeenth International Congress of Medicine, by A. CHAUFFARD, M.D., Professor of Clinical Medicine in the University of Paris; Member of the Academy of Medicine 65

ADDRESS IN SURGERY on Realinements in Greater Medicine: their Effect upon Surgery and the Influence of Surgery upon them. Delivered before the Seventeenth International Congress of Medicine, by HARVEY CUSHING, M.D., F.R.C.S.Eng. (Hon. Causâ), Professor of Surgery, Harvard University 369

ORIGINAL ARTICLES.

The Value of Tuberculin in Pulmonary Tuberculosis. By Sir JAMES K. FOWLER, K.C.V.O., M.D. Cantab., F.R.C.P. Lond., Consulting Physician, Middlesex Hospital, Brompton Hospital for Consumption, &c. 376

The Place of Tuberculin in Treatment in Relation to Other Methods. By WM. CHARLES WHITE, M.D. 377

Theses on Tuberculin Treatment. By Professor Dr. SAHLI 379

Remarks on the Technique of Electrocardiography for Clinical Purposes. By A. D. WALLER, M.D.Aberd., F.R.S. —(*Illustrated*) 379

The Albumin Reaction in Sputum: its Significance and Causation. By PERCY B. RIDGE, M.B.R.U.I., and H. A. TREADGOLD, M.D.Lond. 382

Basophile Patches in the Protoplasm of the Neutrophile Polymorphs. By A. ROEMMELE, M.B., Ch.B. Glasg., and ROBERT SWEET, M.B., Ch.B. Glasg. — (*Illustrated*) 384

Syphilitic Infection Followed by Landry's Syndrome and Later by Tabes Dorsalis. By E. D. MACNAMARA, M.D. Cantab., F.R.C.P.Lond. 385

An Investigation of the "Chronic Irritation" Caused by Fumes and Dust Produced in the Process of Manufacturing Tin-plates. By H. C. ROSS, M.R.C.S.Eng., L.R.C.P. Lond., and J. W. CROPPER, M.Sc., M.B., Ch.B.Liverp. 386

A Case of Volvulus of the Small Intestine Complicating General Peritonitis; Recovery. By C. WILLETT CUNNINGTON, M.B., B.C. Cantab 387

The Prevalence of Chronic Gastric Disease in Spain: Notes on Medical and Surgical Treatment. By W. A. MACKAY, M.D.Edin., F.R.C.S. Edin., and IAN MACDONALD, M.D. Paris & Edin. 387

Étude Préparatoire à un Projet de Révision Internationale de la Terminologie Médicale. Par le Dr. RAOUL BLONDEL, Secrétaire Général de l'Association Internationale de la Presse Médicale 413

CLINICAL NOTES:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

Note on a New Sign in Kala-azar. By R. A. P. HILL, M.D. Cantab., D.P.H. 392

Note on an Unusual Vesical Calculus. By VERNON H. STARR, M.B., B.S. Lond.— (*Illustrated*) 392

REVIEWS AND NOTICES OF BOOKS.

Traité Pratique de Pathologie, Exotique Clinique et Thérapeutique. Vol. VI.: Maladies Parasitaires; Peste. By Various Authors. Edited by Dr. Ch. Grall and Dr. A. Clarac 393

Lehrbuch der Röntgenkunde. Zwei Bände. I. Band. Herausgegeben von Dr. med. Hermann Rieder und Dr. phil Josef Rosenthal 393

L. Landois' Lehrbuch der Physiologie des Menschen, mit besonderer Berücksichtigung der Praktischen Medizin. Dreizehnte Auflage. Bearbeitet von Professor R. Rosemann 394

De Oculorum Fabrica et Morbis. By Petrus Camper 395

Notas Clínicas de Cirugía Ortopédica. Adolfo Lodez Durán 395

Our Outsides and What They Betoken. A Summary. By W. T. Fernie, M.D.Durh. 395

The Journal of Physiology 396

Parasitology 396

The British Journal of Inebriety 397

BRITISH MEDICAL ASSOCIATION

EIGHTY-FIRST ANNUAL MEETING AT BRIGHTON.

Proceedings in the Sections:

Bacteriology and Pathology: Papers, &c., by Mr. Rupert Farrant, Prof. E. J. McWeeney, Dr. W. M. Crofton, Dr. H. F. Moore, Prof. v. Wasielewski, Dr. H. M. Galt, Prof. W. H. Dixon, Prof. Sims Woodhead, Mr. Dennis Embleton, Dr. F. H. Thiele, Dr. E. W. Goodall, Dr. Myer Coplans, Mr. S. A. Edmonds, and others 397

Medical Sociology: Papers, &c., by Mr. Edgar Schuster, Dr. Harry Campbell, Dr. J. Stewart Mackintosh, Dr. James Scott, Dr. C. A. Mercier, Sir H. Bryan Donkin, Prof. Benjamin Moore, Mr. I. G. Gibbon, Prof. Wilhelm Pfeiffer, Dr. Grober 400

Diseases of Children (including Orthopædics): Papers, &c., by Dr. F. J. Poynton, Mr. James H. Nicoll, Mr. T. H. Openshaw, Mr. C. B. Lockwood, Mr. J. S. Kellett Smith, Mr. A. S. Blundell Bankart ... 402

NEW INVENTIONS.

An Abdominal Retractor.—(*Illustrated*) 404

LEADING ARTICLES.

INTERNATIONAL MEDICAL CONGRESS: THE ADDRESS IN MEDICINE 405

INTERNATIONAL MEDICAL CONGRESS: THE ADDRESS IN SURGERY 406

THE UNIFICATION OF MEDICAL NOMENCLATURE 407

ANNOTATIONS.

The Need for Coördination of Antituberculosis Measures 408

The Rat, a Sanitary Menace and an Economical Burden ... 408

Man and his Forerunners 409

Herpes Zoster Simulating Disease Within the Abdomen 409

Acute Unilateral Nephritis 410

The Endowment of Medical Research 410

Massage Establishments and Public Morality 411

Radium Therapy in Myeloid Leukæmia 411

Fibromatosis of the Stomach 411

The Istituto Maragliano 412

Body Metabolism in a Submarine 412

Plague Protection and Rat Catching at Palermo 412

VITAL STATISTICS:

Health of English Towns 420

Health of Scotch Towns 421

Health of Irish Towns 421

SPECIAL ARTICLES.

Royal College of Surgeons of England: Meeting of Council 404

Imperial Cancer Research Fund 417

Royal College of Physicians of London: Meeting of Comitia 419

Annual Report for 1912 of the Medical Officer of Health for the Port of London 419

The Services 421

Medical Practice under the Insurance Act.—XVIII.—Salford and the Pooling System.—(*To be continued*) ... 422

Manchester 424

Scotland 424

Ireland 425

Paris 426

Vienna 426

Constantinople 427

Notes from South Africa 428

New Zealand 429

Notes from India 430

CORRESPONDENCE.

The National Insurance Act (Dr. B. Hall, Dr. W. W. Hardwicke) 430

The Phylacogen Treatment of Chronic Gonorrhœal and Rheumatic Conditions (Dr. Alex. McCall) 432

THE SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

(LONDON, AUGUST 6th to 12th, 1913.)

Commentary 432

The Government Dinner to the Delegates 433

The Inaugural Ceremony 434

The Address in Medicine 435

International Association of the Medical Press: The Morning Sitting.—Luncheon with THE LANCET.—The Afternoon Sitting 436

The Exhibition 437

MEDICAL NEWS.

Metropolitan Hospital Sunday Fund 364

St. Thomas's Hospital Medical and Surgical College 368

The Sussex University College 375

Medical Temperance Committee 382

Industrial Diseases and Compensation 385

Medical Sickness and Accident Society 391

A Centenarian 429

Pass-lists of Royal Colleges of Physicians and Surgeons of Edinburgh and Royal Faculty of Physicians and Surgeons of Glasgow 437

Vivisection Inspectors 437

PARLIAMENTARY INTELLIGENCE.

Notes on Current Topics: The National Insurance Act (1911) Amendment Bill.—The Formation of Local Medical Committees.—Alternative Arrangements for the Panel System.—Conscientious Objectors.—Metropolitan Asylums 437

House of Commons: Local Authorities and Sanatoriums. —The Royal Army Medical Corps.—Highlands and Islands Medical Service 440

Appointments 440

Vacancies 441

Births, Marriages, and Deaths 44

Notes, Short Comments, and Answers to Correspondents ... 442

Meteorological Readings 443

Acknowledgment of Communications received 444

FOR INDEX TO ADVERTISEMENTS SEE PAGES 2 & 4.

INDEX

MEDICAL AND OTHER BOOKS AND PUBLICATIONS

ADLARD & SON:— PAGE
Fenwick .. Indications for Widely Resecting the Bladder Walls Cover 1

BAILLIERE, TINDALL & COX:—
Bigg ..... Indigestion 8
Blumfeld .. Anæsthetics .. Cover 1
Campbell .. Treatment .... Cover 1
Clarke, E. .. Errors of Accommodation, &c. .. Cover 1
Kose & Carless .. Surgery ..... Cover 1
Vincent .... The Nutrition of the Infant ..... Cover 1

CASSELL & CO:—
Morris, Sir M..... Diseases of the Skin.. 7

CHURCHILL, J. & A.:—
Dominici & Warden .. Radium-Therapy in Malignant Disease Cover 1
Hare ..... Alcoholism.... Cover 1
Poynton & Paine .... Researches on Rheumatism ..... Cover 1
Thorne, Bezly .... Schott Nauheim Treatment of Heart 8

EWART, SEYMOUR & CO:— PAGE
Hindhede .. Protein and Nutrition..... 7

FROWDE AND HODDER & STOUGHTON:—
Lockwood.. Aseptic Surgery..... 7
" .. Clinical Surgery..... 7
McCann .. Cancer of the Womb, &c. ..... Cover 1

GLAISHER:—
West ..... Granular Kidney, &c. 8

LEWIS:—
Allen ..... Bacterial Diseases of Respiration.. Cover 1
Campbell .. Headache .... Cover 1
" .. Flushing, &c .. " 1
" .. Nervous Organisation of Man and Woman Cover 1
Carter..... Elements of Practical Medicine 3
Jones ..... Medical Electricity .. 3
" ..... Ionic Medication 3
Lees ..... Incipient Pulmonary Tuberculosis 3
Lewers .... Diseases of Women .. 3
H. K. Lewis's Publications. Cover 1
Martindale & Westcott . Extra Pharmacopœia 7

LEWIS—(Continued). PAGE
Oliver ..... Blood-Pressure 3
Shuttleworth & Potts .... Mentally Deficient Children 3
Stevens .... Medical Diagnosis .. 3
Swanzy & Werner .. Diseases of the Eye.. 3
Tilley ..... Diseases of the Nose, &c. ..... Cover 1

LONGMANS, GREEN & CO.:—
Hare ..... Food Factor in Disease ..... Cover 1
Watson-Williams. Rhinology 8

MACMILLAN & CO.:—
Ballance .. Cerebral Decompression in Ordinary Practice 8
Lockwood.. Appendicitis 7

MEDICAL PUBLISHING CO.:—
Lane, Sir W. A.. Operative Treatment of Fractures 7
" Cleft Palate and Hare Lip 7

MILLS & BOON:—
Ash ..... Nerves and the Nervous .... Cover 1

NISBET & CO.:— PAGE
Lane, Sir W. A.. Treatment of Chronic Constipation 7

UNIVERSITY OF LONDON PRESS:
Bernstein .. Applied Pathology .. 5
Bidwell .... Minor Surgery 5
Cole ..... Mental Diseases .. 5
Evans ..... Diseases of the Skin.. 5
Fox ..... Medical Hydrology .. 5
Marshall .. Diseases of the Eye .. 5
Mortimer .. Anæsthesia and Analgesia 5
Stevens .... Diseases of Women .. 6
Turner & Carling .. Treatment after Operation 5
Whipham .. Medical Diseases of Children 5

WRIGHT & SONS (BRISTOL):—
Index of Differential Diagnosis of Main Symptoms ..... Cover 1
Smith..... Lateral Spinal Curvature, &c. .. Cover 1

MEDICAL LIBRARIES, &c.:—
Behnke—Stammering..... 8
Kotley—Stammering 8
Lewis's Medical and Scientific Circulating Library 5
Matthews Bros.—Wood: Application of Trusses 8

OFFICIAL AND GENERAL ANNOUNCEMENTS

APPOINTMENTS VACANT:—
Ayrshire Sanatorium, New Cumnock 68
Bedfordshire County Council 67
Belgrave Hospital for Children, Clapham-road 66
Birmingham & Midland Eye Hos.. 63
Borough of Plymouth 67
Bradford Royal Infirmary 66
Bristol Royal Infirmary..... 65
Cancer Hospital, Fulham-road.... 63
Canterbury Mental Hospital 63
Carlisle Non-Provident Dispensary 63
Chester General Infirmary 64
Chorlton-upon-Medlock Dispensary 67
City of Liverpool Infectious Diseases Hospital.. 65
City of Sheffield Infectious Diseases, &c., Hospitals 66
County Asylum, Whittingham 63
County Borough of Smethwick.... 67
County Borough of South Shields. 67
County Borough of West Ham 65
Coventry and Warwickshire Hosp. 64
Cumberland and Westmorland Asylum, Carlisle..... 64
Derbyshire County Council..... 67
Devon County Asylum, Exminster 66
Dorset County Council 66
Dorset County Hos., Dorchester .. 66
Dumfries and Galloway Royal Infirmary 66
Durham County Council 67
Durham County and Sunderland Eye Infirmary 64
East Sussex Hospital, Hastings .. 64
Elder Dempster & Co., Liverpool.. 68
Essex County Hosp., Colchester .. 66
Gateshead Dispensary 63
Glasgow District Mental Hospital, Gartloch 68
Gloucestershire County Council .. 67
Grimsby and District Hospital.... 63
Herts County Asylum, St. Albans. 65
Horton Infirmary, Banbury 64
Imperial Bacteriological Veterinary Laboratory, Muktesar, India 64
Ingham Infirmary, &c., South Shields 64
King Edward VII.'s Hos., Cardiff. 64
Leeds Public Dispensary 66
Liverpool Workhouse Hospital .. 65
Lowestoft Hospital 65
Manchester Royal Eye Hospital .. 66
Manchester Royal Infirmary 66
Monmouthshire Asylum, Abergavenny 66
Monsall Fever Hospital..... 66
Newcastle-upon-Tyne Dispensary . 69
Norfolk and Norwich Hospital.... 65
North Riding Infirmary, Middlesbrough 64
Oxford County Asylum, Littlemore 66
Parishes of St. Giles and Bloomsbury 65
Park Hospital for Children, Hither Green 65
Radcliffe Infirmary & County Hos. 63
Royal Albert Hospital, Devonport 63
Royal Alexandra Hospital for Sick Children, Brighton 66
Royal Berkshire Hosp., Reading . 64
Royal Devon and Exeter Hospital 63
Royal Gwent Hospital 64
Royal Halifax Infirmary 66
Royal Infirmary, Sheffield 64
Royal Infirmary, Sunderland..... 66
Royal Naval Medical Service..... 65
Royal South Hants and Southampton Hospital..... 66

APPOINTMENTS—(Continued).
St. Mary's Hospital for Women and Children, Plaistow..... 63
St. Mary's Hospitals for Women and Children, Manchester 66
South Devon and East Cornwall Hospital, Plymouth..... 65
Stroud General Hospital 64
Swansea General and Eye Hosp.. 64
Township of Manchester Workhouse, Crumpsall 67
University of Birmingham 63
Victoria Hospital, Burnley 64
West Ham & Eastern General Hos. 67
Whitehaven and West Cumberland Infirmary 67
Wolverhampton and Staffordshire General Hospital 66
Worcester General Infirmary 63
Worcestershire County Council .. 65
Wrexham Infirmary 67

ASSISTANCIES, MEDICAL:—
Arnold & Sons, Giltspur-street 68
Devitt & Moore, Fenchurch-bldgs. 68
Hall Line 68
King, Cambridge 69
No. 461, L.O., Strand 68
No. 470, L.O., Strand 68
No. 474, L.O., Strand 68
Ocean Steamship Co., Liverpool .. 68
Scholastic, Clerical, &c., Assoc. .. 68
Turner 69
"Z. H. 735," Leadenhall-street 68

ASYLUMS, HOMES, &c.:—
Ashwood House, Kingswinford .. 55
Association of Medical Men Receiving Resident Patients 62
Barnsley Hall, Bromsgrove 55
Barnwood House Hospital 56
Bishopstone House, Bedford..... 55
Bootham Park, York 55
Brunton House, Lancaster 62
Buntingford House Retreat, Buntingford 59
Camberwell House, Peckham-road 55
Cheadle Royal..... 56
Clarence Lodge, Clapham-park .. 55
Coltburst House, Warford 62
Coppice, The, Nottingham 56
Dadson Nursing Homes 54
Dalrymple House, Rickmansworth 58
David Lewis Colony, Alderley Edge 62
Duff House, Banff..... 60
Ghyllwoods 59
Grove House, Church Stretton.... 56
Grove, The, Catton, Norwich..... 56
Haslemere Nursing Home 65
Haydock Lodge, Newton-le-Willows 57
Haynes, Brentwood..... 65
Heigham Hall, Norwich 55
Home for Epileptics, Maghull 55
Invernith Lodge Sanatorium, Colinsburgh 59
Kingsdown House, Box..... 55
Lady Margaret Lying-in Homes .. 63
Lady Superintendent, Streatham.. 63
London Fever Hospital..... 56
Mailing Place, Kent 56
Manna Mead, Blackheath 62
Melbourne House, Leicester 54
Meyrick, Brighton 62
Middleton Hall, Co. Durham..... 55
Moat House, Tamworth 56
Mount Vernon Hospital for Consumption 59
Newmains Retreat, Lanarkshire.. 59
New Saughton Hall, Polton, Midlothian 57
Nordrach-on-Dee, Banchory 59

ASYLUMS—(Continued).
Northumberland House, Finsbury-park 55
Northwoods House, Winterbourne 57
Norwood Sanatorium, Ltd..... 58
No. 467, L.O., Strand 62
Osea Island, Heybridge..... 56
Otto House, West Kensington 62
Peckham House..... 58
Pendyffryn Hall Sanatorium, Nordrach-in Wales 59
Pinewood Sanatorium, Wokingham 59
Plympton House, Plympton 56
Portsmouth Corporation Mental Hospital..... 55
Ruebury Sanatorium, Northallerton 60
St. Andrew's Hospital, Dollis Hill 63
St. Andrew's Hosp., Northampton 56
St. George's Retreat, Burgess Hill 55
St. Luke's Hospital for Mental Diseases 55
Springfield House Private Asylum, Bedford 56
Stocker, Craven-street 63
Stretton House, Church Stretton.. 56
The Grange, Rotherham 56
Vale of Clwyd Sanatorium 60
Warneford Asylum, Oxford..... 55
White Lodge, Beltinge 62
Wye House, Buxton..... 56
Yarrow Convalescent Home, Broadstairs 57

FINANCIAL, &c.:—
Equitable Reversionary Interest Society.. 52

HEALTH RESORTS, BATHS, &c.:—
Arosa 62
Contrexeville Pavilion Spring 61
Smedley's, Matlock 62
The Orchard Spa, Tenbury Wells.. 60
Vichy..... 61

HOTELS:—
Hotel Windsor 60
Knowle Hotel, Sidmouth 60
Pension & Hotel Buol, Davos-Platz 61
Royal Hotel Hydro and Baths, Matlock 62
White Hart Hotel, Margate 60

HOUSE & ESTATE AGENTS:—
Elliott, Son & Boyton, Vere-street 69
Ley Clark, Wimpole-street 69
No. 459, L.O., Strand 69
No. 477, L.O., Strand 69
No. 484, L.O., Strand 69

LIFE & FIRE ASSURANCES, &c.:—
General Life Assurance Co. 52
National Provident Institution .. 52
Prudential..... 52

MASSAGE:—
London School of Massage 52

MEDICAL ACCOUNTANTS, &c.:—
Turner 69

MEDICAL AGENTS:—
Blundell & Rigby 70
Fieldhall, Limited..... 72
Manchester Clerical, &c., Assoc.... 70
Medical Agency 70
Needes, Herbert 70
Needes, J. C. 70
Peacock & Hadley..... 70
Scholastic, Clerical, &c., Assoc. .. 71
Turner 72

MEDICAL SCHOOLS:—
(LONDON.)
Charing Cross Hospital Medical School 49
Guy's Hospital Medical School.... 50
London Hospital Medical College and Dental School 50
London School of Clinical Medicine 49
St. Bartholomew's Hospital and College 48
West London Post-Graduate Coll.. 49
(PROVINCIAL, &c.)
University of Birmingham 51
University of Durham College of Medicine, Newcastle-upon-Tyne. 51
University of Leeds 52
University of Sheffield 50

NURSING INSTITUTES:—
Army and Navy Male Nurses Co-operation 53
General Nursing Association..... 53
Hospital for Sick Children, Great Ormond-street 52
Leeds Trained Nurses' Institution 54
London Nurses' Association 54
London Temperance Male and Female Nurses Co-operation .. 53
Male Nurses Temperance Co-operation 54
Mental Nurses Co-operation 53
National Hospital Male Nurses' Association 53
New Mental Nurses' Co-operation 54
Nurses' Co-operation, Portland-place 53
Registered Nurses' Society..... 53
St. Bartholomew's Hosp. Trained Nurses' Institution 52
St. John's House 53
St. Luke's Hospital, E.C. 53
Temperance Association of Male Nurses, Ltd..... 54
Temperance Male Nurses Co-operation 53
Temperance Male and Female Nurses Co-operation 53
The Retreat, York 54

OFFICIAL NOTICES:—
City of London Lying-in Hospital.. 49
Educational Institute of Scotland. 51
London Hospital 49, 52
Medical Graduates' College and Polyclinic 48
Queen Charlotte's Lying-in Hosp.. 49
Royal College of Physicians and Royal College of Surgeons 50
St. Bartholomew's Hospital and College 48
University of Cambridge 52
West End Hospital for Diseases of Nervous System..... 49

PARTNERSHIPS & PRACTICES:—
Arnold & Sons, Giltspur-street 69
Love & Williamson, Beith 69
Manchester Clerical, Medical, and Scholastic Association 69
No. 454, L.O., Strand 69
No. 473, L.O., Strand 69
Turner 69

RAILWAY & STEAMSHIP CO.'S:—
New Zealand Shipping Co..... 52

TUTORS & LECTURERS:—
Beckton 52
Knight 52
Med. Corres. College 52
Miall, Argyll-place 8
Schnelle 8
Weymouth .. 49

For Index to Trade and Miscellaneous Advertisements see page 4.

Presidential Address

Delivered before the Seventeenth International Congress of Medicine on August 6th, 1913,

BY SIR THOMAS BARLOW, BART., K.C.V.O., M.D., F.R.S.,

PHYSICIAN EXTRAORDINARY TO HIS MAJESTY THE KING; PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON.

YOUR ROYAL HIGHNESS, MY LORDS, LADIES AND GENTLEMEN,—My first duty is to express our gratitude to His Majesty the King for graciously consenting to be the Patron of the Seventeenth International Medical Congress. My second duty is to thank His Royal Highness Prince Arthur of Connaught for representing His Majesty on this occasion in the inauguration of the Congress and for the important address which he has given to us. My third duty is to acknowledge the kindness and the consideration of Sir Edward Grey, the Minister of Foreign Affairs of this country, for the official and hearty welcome which he has given to our foreign members.

IN PRAISE OF FAMOUS MEN.

A whole generation has passed away since the International Medical Congress last met in London. What a magnificent galaxy of talent in medicine, surgery, and pathology was gathered round the Prince of Wales, who was our Royal Patron at that time! It is fitting that we should follow the admonition of Ecclesiasticus and praise famous men and the fathers that begat us.

Our President, Sir James Paget, was a great clinical pathologist. His mind was stored with all that was then known of the morbid anatomy of surgical disease and injury, and of the family relationship of the different diatheses. He was a splendid teacher and possessed a lucid eloquence and a moral fervour not excelled by any of his contemporaries.

Jenner and Gull, Wilks and Gairdner, were our great teachers of clinical medicine. Each of them based his knowledge on the sure foundation of the post-mortem room and the hospital wards. We shall not see their like again, for their careers began before the days of specialisation, and they were amongst the last of the great general physicians of our time.

Hughlings Jackson was the philosophical exponent of the new neurology. Many of his forecasts were verified by the experiments of David Ferrier, of which I may say there was a remarkable demonstration at the 1881 Congress.

Jonathan Hutchinson was the patient, accurate recorder of the natural history of disease in multitudinous departments, and, characteristically enough, he was the organiser of our Congress clinical and pathological museum.

The pioneers of abdominal surgery—Spencer Wells, Thomas Keith, and Lawson Tait—were with us. Huxley, the most brilliant expositor of natural science of his time, discoursed to us on the relations of medicine and biology.

William Bowman, whose work on the minute anatomy of the eye was the foundation of modern English ophthalmology, was one of our most useful members.

Last of all the Englishmen whom I will mention was our great Lister, then in the zenith of his grand career. He has but lately been taken to rest in the fulness of years, and we commemorate him to-day in the medal of our Congress.

Our foreign brethren were not less illustrious in the bede roll of medical and surgical achievement.

Virchow, the Nestor of morbid anatomy, honoured and beloved by us as by his own countrymen, delivered a fine historical discourse on the value of pathological experiments. Volkmann gave a critical survey of the recent advances of surgery.

Robert Koch gave what may truly be called a path-breaking demonstration of the microbial findings in several morbid conditions, and he illustrated their characteristic growth on different organic media.

Von Langenbeck and Esmarch spoke for military surgery. Donders and Snellen for ophthalmology. Baccelli, Murri and Pantaleoni represented Italian medicine. From the United States came Austin Flint, the accomplished physician and master of physical examination; Billings, prince of medical bibliographers; and Bigelow, the famous surgeon.

The great French school was represented by Brown-Séquard and Charcot, Lancereaux and Bouchard and Verneuil and a host of others; but there was one great Frenchman with us who towered aloft amongst all his contemporaries and who, though not a medical man, exercised by his discoveries a profound influence on the medicine of the world, and that was Louis Pasteur. In his address on vaccination in relation to chicken cholera and splenic fever he gracefully linked his most recent researches with the time-honoured labours of Edward Jenner on cowpox.

Time fails me to speak of other great and honoured names, but surely we may say there were giants in those days.

THE PARTING OF THE WAYS.

Now let us realise to ourselves that the Congress of 1881 marked not the parting of the ways but emphasised the notable fact that the parting of the ways had already been passed. The times of superstition, of empiricism, and of transcendental speculation had vanished. But what of the period of accurate and detailed observation? That was neither superseded nor completed, but it was already supplemented and redirected into more fruitful channels by the new development of *experimental methods*.

If it had not been for the work of Pasteur, Lister, and Koch, which was expounded to us 30 years ago, how poverty-stricken would have been the output of medicine and surgery in this our Congress of 1913.

The great men—both observers and experimenters—of whom I have spoken were like mountain peaks towering above the plain of ordinary medical humanity, and we sometimes sadly ask where are the mountain peaks now? That is a shallow and unenlightened question. For indeed, thanks to the unremitting labours of workers in multitudinous paths, we have attained a glorious heritage, not of high mountain peaks and deep valleys, but a lofty and magnificent tableland of well-ordered and correlated knowledge.

Consider the bare fact that the 15 sections of the 1881 Congress have, by the inevitable specialisation and concentration of work, become 23 sections and three subsections in 1913; but so imperative is the demand for mutual conference that we have no less than 14 meetings arranged in which sections have found it desirable to discuss various problems in joint session.

In what ways have we pursued and expanded the work of our fathers?

THE DEVELOPMENTS IN MICROBIOLOGY AND PARASITOLOGY.

First, unquestionably in the development and application of bacteriology. Koch's great discovery of the life history of the tubercle bacillus was published in the year after the London Congress, and what an enormous body of knowledge has grown out of that discovery! We are learning to discriminate between the essential and causal factors of disease and the concomitants, such as combined and terminal infections. The by-products and the antibodies developed to neutralise bacterial life, of which we see the beneficent rôle in Nature's own cure of an acute specific disease, have been made to yield their share in two important methods of treatment—viz., serotherapy and vaccinotherapy. We have also faced the problem of strengthening the phagocytosis of the patient.

I need not dwell on the history of the Klebs-Löffler bacillus and the causation of diphtheria, nor on the indubitable efficacy of the most important of all the antitoxins, nor on the singular parallelism between the bacteriological findings in atypical throat exudations with the ambiguous symptomology which clinical observation reveals. Nor need I dwell on the extension of bacteriological investigation of typhoid which has been fruitful in new measures of prophylaxis and defence of the community.

We have learned something about the natural history of the ultra-minute organisms which as "filter passers" elude our microscopic investigation.

There are still great gaps in our knowledge of the infective organisms of the specific diseases, but it is a gain to have learnt from the study of recent epidemics that infantile paralysis must be grouped with the infective diseases, and thanks to Flexner we know many of the reactions of its elusive organism.

Great advances have been made in protozoology, in helminthology, and indeed in the whole subject of the relation of the parasites to the diseases of man and animals.

In tropical diseases these studies as well as bacteriology have brought about a rich harvest.

Mediterranean fever, plague, malaria, sleeping sickness, have all yielded more or less of their secrets. Sometimes the whole cycle of the disease has been discovered, rationalised in every respect, and its successful treatment has been evolved. In other cases, as in malaria, sleeping sickness, and yellow fever, where only parts of the natural history of the disease have been elucidated, nevertheless enough real knowledge has been acquired to enable important though sometimes costly hygienic measures to be successfully employed. Here it is fitting that we should offer our homage to our American brethren for their splendid hygienic work in Cuba, in Panama, in the Philippines, and in Costa Rica, and for the efforts which they are organising for a world-wide crusade against ankylostoma disease.

AN OUTLINE OF PROGRESS IN MANY DIRECTIONS.

Chemical pathology has widened our knowledge and our resources, and the mystery of immunity has been to some extent illuminated.

The detailed examination of the morphological elements and the chemical characters of the blood and other body fluids has eventuated in the rewriting of some of our physiology, and the pathological extension of the knowledge thus gained has improved the diagnosis and the treatment of several diseases.

Thirty years ago Ord demonstrated to the Congress of that time examples of the disease which he had defined as myxœdema, but which, with surer instinct, Gull had described as a cretinoid state in adults. The gradual evolution of the doctrine of thyroid insufficiency and of its therapeutics is a model of induction. And this important discovery has given a great impetus to the whole study of internal secretions as well as to the employment of organic extracts, of which the last and most interesting is that of the pituitary body.

The empirical and then the experimental study of small variations in the ordinary diets of adults and children and infants in different social strata and in different countries has been fruitful in many unexpected ways. The great milk problem is still with us, but we have learnt the blunders of our early generalisations. Cleanliness in the milk-supply from start to finish has a far more exhaustive meaning than in days gone by.

The curious disease beri-beri, which some of us have long thought had parallelisms with scurvy, has been shown, at all events among rice-eating people, to depend on the loss of the nutritive material just internal to the pericarp which the ordinary process of milling removes.

The patient study of chronic alcoholism has opened up a new chapter in nervous diseases. The routine traditional employment of alcohol in disease has happily been largely discredited. The open-air treatment of all forms of tubercular lesions has had a wide indirect influence not only on the treatment of other chronic ailments but on the daily life of the people.

The recognition and radical treatment of oral sepsis due to damage to the gums in consequence of various disorders of teeth has been followed by remarkable benefit. A strong case has been made out for intestinal stasis as a cause of various forms of malnutrition and for operative measures in dealing with slight mechanical obstructions, and on this subject we hope for further evidence.

The additions to diagnosis yielded by X ray exploration are like the creation of a fifth sense and its curative applications and those of radium are the opening of a new chapter of therapeutics.

I ventured to hint that medicine had now and then led to the rewriting of some chapters of physiology, and I may add that recent researches on diseases of the heart have led to the re-editing of neglected knowledge of the minute structure of heart muscle and of orderly and disorderly mechanism of its movements.

THE TRIUMPHS OF SURGERY.

Of the magnificent triumphs of the surgery of this generation it is beyond my power adequately to speak, but I can refer to the wide fields opened up through the beneficent protection of Listerism. We are staggered by the reasoned and calculated audacity of our brethren when sinuses of the skull are drained, cerebral abscesses evacuated, cerebral tumours removed, the pituitary body even being investigated, when pleuro-pericardial adhesions are freed to the great relief of the heart, when different parts of the alimentary canal are short-circuited, and when one or other damaged viscus is removed either entirely or in part. The active coöperation of surgeons and physicians has gained for us some knowledge of what Moynihan and others have happily described as "living pathology," and we gracefully acknowledge the invaluable information of correlated symptoms, signs, and morbid conditions, and the statistics of comparative frequency which surgical experience has brought to the common store.

The supreme gain, after all, is that many more useful lives are saved than in the last generation, that the realm of grave and hitherto incurable disease is invaded on every side, and that the danger of operation *quâ* operation is retreating to a vanishing point.

It is impossible even to enumerate the varied ways in which medicine has coöperated with economics, social legislation, and philanthropy which we sum up briefly as public health. The school-house and the scholars, the home of the poor, the colliery and the factory, the dangerous occupations, the sunless life of the mentally deficient, have benefited, and will benefit still more by its friendly invasion. And I venture to foretell that not many years hence every department of life and work shall be strengthened and purified and brightened by its genial and penetrating influence.

CONCLUSION.

Surely I have said more than enough to justify my contention that we have come into a goodly heritage, and that that heritage is like a lofty and magnificent tableland of knowledge and efficiency.

The gaps are being filled; we are no longer isolated, but are working side by side on adjacent areas which are inseparably connected. Every day we gain fresh help from the auxiliary sciences, and we realise more and more the unity and the universality of medicine.

Brethren from foreign lands, we thank you for the treasures new and old of observation and experiment and of a ripe experience which you have brought to this Congress for the common weal. I venture to affirm that the output of work of the Congress week in its 23 goodly volumes will astonish civilised countries by the amount of its solid worth. I welcome you to our dear country, this ancient home of freedom, and I speak not only for the medical men of the British Isles, but for our brethren of the overseas dominions of this great Empire, who join with us in our cordial greeting.

May this Congress add to the common store of fruitful and useful knowledge, may it increase our good fellowship, our mutual understanding and coöperation, and may it help to break down the barriers of race and country in the onward beneficent march of world medicine.

METROPOLITAN HOSPITAL SUNDAY FUND.—A council meeting of the Metropolitan Hospital Sunday Fund was presided over by Sir David Burnett, the Lord Mayor, at the Mansion House on July 30th, when awards were ordered to be paid to some 263 institutions. In its report the Distribution Committee stated that the total of the Fund to August 5th would amount to £59,381. It recommends that £59,134 be paid to the various institutions applying, but with regard to St. George's Hospital it recommends "that no order be made as to payment until the committee is satisfied that no payment is made from the general fund of the hospital to the Medical School except for work done in the treatment of the patients." In proposing that the report be approved, Sir William Church said that the total collection to date was made up of the church collections, £31,485, which were somewhat less than the total of former years, the dividends on the late Mr. George Herring's bequest amounting to £20,793, and some small amounts from various sources. Sir John Bell, who seconded the motion, said he was still hopeful that by the end of October the total collections of the Fund would approach the sum reached in previous years. The report was then unanimously approved, and the awards (already published in full in the lay press) were recommended to be paid forthwith.

Address in Medicine
ON
MEDICAL PROGNOSIS:
ITS METHODS, ITS EVOLUTION, ITS LIMITATIONS.

Delivered at the Seventeenth International Congress of Medicine,

BY A. CHAUFFARD, M.D.,
PROFESSOR OF CLINICAL MEDICINE IN THE UNIVERSITY OF PARIS; MEMBER OF THE ACADEMY OF MEDICINE.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—In asking me to address to-day this great medical assembly, the committee of the Seventeenth International Congress of Medicine have conferred on me a signal honour for which I desire in the first place to express my very sincere thanks. I should feel most unworthy of this high distinction were I not conscious that it is directed much less to my person than to French medical science. The medical men of France have come in large numbers to this Congress with the desire of learning, of making known their work, and also of maintaining and tightening the bonds of amity and esteem which link them to their colleagues of every nation, and more especially of the great country which is receiving them so splendidly to-day. Since, for one brief instant, it is given to me to be their spokesman before you, allow me to enter immediately upon the theme which I shall have the honour to consider in this address.

EVOLUTION.

The subject I purpose to discuss is that of Medical Prognosis considered in regard to its Methods, its Evolution, its Limitations.

Medical Prognosis! Is it not for us the daily problem, the anxious question which is constantly being put to us and which we put to ourselves? Ever since there have been sick patients and men who endeavour to relieve them and to restore them to health the same query has come up in every case: Will a cure be effected and by what therapeutical means? Prognosis and treatment, such were from the very first the two instinctive needs, the two immediate demands of the sick man. It was only at a later period, at a more advanced stage of medical culture, that the previous need became felt of diagnosis, which is a notion of purely intellectual and logical order. But if diagnosis has been the latest of our acquisitions, it has now taken its proper rank—the first. What physician, failing an accurate diagnosis, could venture on a prognosis or prescribe a treatment? An entirely modern idea—but one which should imbue our minds nowadays—is that of defining in each particular case the mutual relationship between those three fundamental elements of medical judgment: to know, to foresee, to act. Instinctive in the remote ages and, later, hesitating and seeking its way for a long period of time, the act of the physician tends to become more and more rational and systematic. It is the passing from art to science which our epoch is striving hard to achieve, often with success.

In this uninterrupted evolution medical prognosis has not remained at a standstill; almost before our own eyes, and by the mere progress of contemporary science, it has undergone a gradual change. Its methods are being modified, its limitations are being carried further back every day; it is in a state of perpetual transformation. The present time is perhaps a suitable one for a general survey of our present position and for an appraisement of our acquisitions and desiderata. Such is the task I intend to attempt this afternoon before you.

The Hippocratic Era.

In the history of medical prognosis a large place should be ascribed to the Hippocratic era, and it is impossible to peruse those venerable writings without a feeling of deep admiration. In those days the physician, having no technical means of investigation at his command, could naturally have but a purely objective vision of his patient, but how penetrating was this vision, how skilful in grasping, coördinating, and interpreting the most minute details! What a searching study, what a constant scrutiny of the prognostic signs derived from the general condition of the patient and revealed by his facies, his position in bed, the movements of his hands, his breathing, his sweating, the state of his hypochondria, his dropsical swellings, his sleep, his urine, his stools, his vomit, his sputum. The book on "Prognosis" is only concerned with acute febrile diseases, but from its descriptions there is nothing to be omitted. "The best physician appears to be the one who knows how to know before"; such is the opening sentence of those admirable pages, so replete with clinical observation and medical philosophy. The body should always be considered as a whole and "all things should be judged by the study of signs and the estimation of their relative value." The same idea is upheld by Plato in his *Charmides* when he says: "It is impossible to cure a part without the whole." The same principle pervades all the Hippocratic works, and the famous doctrine of the *Crises* is but a systematisation of prognosis in acute diseases. Thus prognosis was considered as a comprehensive survey of disease and its probable course. From the very first Hippocratic medicine had placed itself at the centre-point and had attempted to synthetise clinical prognosis.

Such are the earliest sources to which we must ever revert. Those primordial notions have lost none of their value, and if we have added much we have parted with nothing. To this day those objective data are amongst the things that no clinician has the right to neglect, and the general impression they suggest at the patient's bedside leads us to pretty much the same prognostic conclusions as of old.

For more than 20 centuries medical observation went no further and was restricted to the same elementary information until the day when new methods were added to the ancient practices, rendering possible the analysis of morbid disturbances. Thenceforth it is by the analytical method, with the help of a more and more penetrating technique, that medical inquiries progress; at the same time, more direct paths are open to prognosis.

The Modern Era.

The modern era begins with Auenbrugger and Corvisart, who introduced percussion; with Laennec, the immortal inventor of auscultation; with Richard Bright, the creator of renal pathology. By those memorable discoveries the whole of medicine was at once transformed. Direct exploration became possible and efforts were made, in Laennec's own words, "to place in regard to diagnosis internal organic lesions on the same line with surgical diseases." To detect morbid changes in the living subject, to ascertain their degree and evolution, amounted to creating modern diagnosis and to giving prognosis more certain bases. It amounted also to demonstrating all the importance of a new science, pathological anatomy, which by its precise descriptions was going to corroborate and check clinical investigation and to direct medicine for a time towards the exclusive quest for lesions and for organic changes. To detect the lesion in the living subject, to identify it in the cadaver, and to deduce therefrom diagnosis and prognosis, such became the system of what was to be, for more than half a century, *Organicist Medicine*—a noble system which contained a large share of truth, but a narrow doctrine which tended to confuse the lesion with the disease which caused it. Doubtless, to a certain extent, the lesion *is* the disease in course of evolution: but the anatomy of the dead body affords but the conclusion, the terminal condition. *Anatomical prognosis* therefore soon found its limitations. It is probably in the field of neuro-pathology that it has achieved its greatest triumphs, and the whole of Charcot's work rests on the anatomo-clinical method rationally applied. Need I add that if we are mere organicists no longer, we have nevertheless cast aside or forgotten no part of our predecessors' labour? Their work rests on the ancient fabric like a new geological stratum: on this stratum we have erected our modern constructions, more extensive and solid because they rest on larger and deeper foundations.

Unceasing Progress.

The succeeding stage is marked by the influence of Claude Bernard's memorable work. With him pathology became deviated physiology, and disease became a disturbance of normal functions. We can recognise a morbid state and

alter its probable course and consequences only if we are acquainted with the *functional disturbances* it causes. Without this essential notion how could we scientifically conceive the prognosis of a lesion of the heart, or liver, or kidney, or of the digestive or respiratory systems? Modern effort tends each day to greater advances along the paths opened up by Claude Bernard. With our improved instruments and laboratory technique, through our researches on the blood and body-fluids and on cytological reactions, we aim at gauging accurately the functional value of the various structures, the organic reactions of defence, the substitutions and compensations as well as the morbid synergical actions that take place in the human system. We physicians now strive to reason and to act as physiologists or, better still, as biologists. Our system of analysis makes use at the same time of the methods, now closely associated, of clinical medicine and of experimental pathology. It attempts to dissociate the infinitely complex problems of pathogenesis and the relationship between causation and secondary reaction. Nor can we arrive at a prognosis unless we take all those factors into account.

And so, after this long circuit, after all this analytical work, we find ourselves returning—as in the early ages of medicine—to Hippocratic prognosis, to the synthetic and comprehensive consideration of what the ancients used to call the *State of forces*. Whether from a historical or a practical standpoint, we thus find that prognostic investigation has progressed by successive stages from anatomical lesions to functional disturbances and to chemical changes until it has reached the stage where judgment is based on criteria of a dynamic and vital order. How can we estimate the prognosis of heart disease if we do not take into account the functional value of the myocardium, of hepatic disease if we ignore the ureogenetic function of the liver, of nephritis if we know not the degree of renal permeability and the amount of urea in the blood serum? What should we know about the future of a diabetic subject if we did not ascertain the state of his nutritional exchanges, if we did not detect the first signs of the acid intoxication which threatens him? Again, what should we know about a gouty subject if we knew nothing about his blood pressure or the working of his kidneys? If diagnosis consisted simply, as Pinel would have it, in "assigning to a given disease its proper place in Nosology," it would be a most fruitless and conventional effort. Our conception is a very different one; for us diagnosis signifies the recognition, as perfect and precise as our means of investigation will allow, of a morbid condition considered in regard to its origin, its present state, its future course. Thorough diagnosis is almost one with scientific prognosis—at least they constitute two closely connected ways of considering the same facts. If we remember all that we owe to contemporary hæmatology, to biological chemistry, to electrology, to radiology, we see how inseparable are the notions of diagnosis and prognosis thus obtained. Of equal importance, both for diagnosis and prognosis, are the temperature charts, the curves of urine and weight, the cardio-vascular tracings such as we have learned to take and interpret them from Marey and from James Mackenzie, the research in the blood of bactericidal properties, of agglutinins, of opsonins, the analysis, both qualitative and quantitative, of the various constituents of the serum. We arrive at the same conclusion if we consider the history of the leucocytes of the blood, with their chemiotactic and phagocytic reactions.

Thus prognosis takes its immediate share in all the advances of diagnostic technique. This unceasing progress might make us imagine that there are no limits to its possibilities. It certainly is far from having reached its future boundaries, although we feel hemmed in by the present-day ones. These we shall attempt to define later.

REMOTE PROGNOSIS.

Medical prognosis, then, is a very complex matter necessitating the consideration of multiple criteria. Yet, if thus strictly considered, it would still be very incomplete inasmuch as it would not be taking the future into sufficient account.

Now the future, to us physicians, is a preoccupation inseparable from the actual disease we are treating. This is a recent notion, it is true; for it was formerly imagined that a disease cured had no morrow. How great was this error and how far we now are from such a fallacy! Every day this question of remote prognosis arises, and it may be said to have made its appearance in science with the discovery by Bouillaud of rheumatic endocarditis. The French physician had doubtless more than one forerunner, and it is in England that the early work was accomplished. David Pitcairn, physician to St. Bartholomew's Hospital, was the first to observe that rheumatic fever is a common cause of heart disease; he taught this fact to Matthew Baillie, a great pathologist who, in the words of Sir Dyce Duckworth, deserves to be called "the English Morgagni of his time." With Wells, David Dundas, this notion acquired greater precision, and at the same time Odier and Matthey, in Geneva, reached a similar conclusion. Finally, in 1818, James Johnson recognised and described the cardiac metastasis of rheumatic fever.

When Bouillaud took up the subject he was better armed than his predecessors. Through systematic auscultation of his patients and through post-mortem examinations he discovered and described rheumatic endocarditis. From that time on the prognosis of rheumatic fever was a different matter. Next to—or rather before—immediate prognosis now arose the question of remote prognosis. When we are called to a case of rheumatic fever the first thing we want to know is whether the heart is affected or not. Over and beyond the present illness we see and fear possible valvulitis; we try to avert it or to arrest its progress. The prognosis for the morrow takes the lead of the prognosis of the day.

The various zymotic diseases afford many examples analogous to this classical instance of chronic heart disease originating with rheumatic fever and progressing afterwards for years and years as an autonomous disease, with its special association of anatomical lesions and functional disturbances. The Pastorian discoveries have provided us with a general theory of infection; they have shown the preponderating part played by microbic toxins in the many visceral diseases, acute or chronic, seen every day in clinical medicine as well as in experimental pathology. How many patients appear to be cured of an acute infection and yet their health may remain affected, perhaps for ever. Innumerable instances might be quoted: the kidney of patients having had scarlet fever or pneumonia, the arterial system of typhoid patients, post-infectious lesions of the ductless glands, trophic disturbances and arrest of growth following infantile paralysis. How often, after apparent cure has been effected, do we find morbid conditions progressing which our best efforts do not always arrest!

If we pass from acute to chronic infections this question of remote prognosis becomes still of greater moment. Let us consider an individual who has recently contracted syphilis. Do we for a moment imagine that after we have cured the secondary manifestations all is over and that our task is at an end? So little do we think so that in our apparently quite healthy subject we go on applying the treatment, we periodically ascertain the result of Wassermann's reaction, we keep in mind the possibility of late tertiary manifestations or of vascular syphilis in the shape of aneurysm, or again of one of those redoubtable cerebro-spinal localisations which constitute the darkest chapter in the history of syphilis. We have got to the point that we are wondering whether a number of lesions, apparently commonplace, are not due, wholly or in part, to remote syphilitic infection. For my part I am convinced that such is often the case with arterio-sclerosis and with certain chronic conditions of the liver, kidneys, and myocardium.

What we have just said of syphilis is equally true of tuberculosis, and those two great infections share between them a very wide field in pathology. Tuberculosis, like syphilis, has far-reaching and tardy consequences. Inoculated in infancy it may come to life in the adult age and sometimes even in old age; it is often after many years that the real gravity is revealed of a long-forgotten glandular enlargement or of a pleural effusion long since cured. Moreover, apart from the typical forms of tuberculosis, caseous and follicular, we have learned to distinguish numerous varieties of atypical or inflammatory tubercle of which the true nature is demonstrated by experimental inoculation. This generalisation has perhaps been carried too far; it would tend to make us believe that the greater number of pathological findings are referable to remote syphilitic or tubercular infection. This, in my opinion, would be an exaggeration; but the fact remains that in regard to syphilis and tubercle we know

where prognosis begins, but we cannot foresee its limits. No physician can assure his patient of absolute cure without any possibility of some tardy sequel, whether specific or atypical in character.

The same might be said about gout, lead poisoning, alcoholism, &c. The acute disturbance disappears, but remote sequelæ are always possible. We might almost say that nothing is forgotten in the system, and that any adulteration of a tissue or body-fluid leaves its trace. The discovery of anaphylaxis by Charles Richet affords the best demonstration of this fact, and we can repeat, in the words of that distinguished scientist, that "we have a *humoral* personality which makes each different from other individuals: this personality of our humours is due precisely to the various ingestions and intoxications which have affected our system and left an indelible trace."

If we bear these notions in mind the scope of prognosis in morbid conditions is found to be remarkably extended. The pathological life of an individual appears no longer merely as an interrupted series of isolated episodes; but we try to discern its unity, to follow its continuous course, and to take into account the sudden and sometimes final deviations and the new pathological directions that may be given to the organism by an intercurrent disease. On these points, as well as on many others, the findings of modern clinical medicine approximate to and complete the teachings of tradition. The "humoral personalities" of Charles Richet seem very closely connected with the ancient doctrine of the "diatheses," recently defended with such conviction and eloquence by Sir Dyce Duckworth.

Family, Collective, and Social Prognosis.

Let us now extend a little farther the scope of our medical foresight. Our prognosis will then include the future of *the patient's descendants*. I cannot dwell at length on this very important aspect of my subject, but it is evident that the possibility of inherited syphilis or tuberculosis, that the transmission of abnormal humoral conditions, such as hæmophilia and congenital hæmolytical icterus, or of family taints like those so often met with in neuropathology, do aggravate those several diseases by placing them in the group of hereditary pathological conditions.

This is not all. Next to the prognosis concerning the individual and his descendants we must consider *collective prognosis*. This is a question of a practical order which originated quite recently with the contemporary investigations on *germ-carriers*. Take, for instance, a school where a case of diphtheria has broken out. Will this be an isolated case or will it become the starting-point of a small localised epidemic? The preventive measures to be taken will depend to a great extent on our judgment, and we must be guided by the direct examination of the other children in the school. We must ascertain whether amongst them there are not some who are carrying Loeffler's bacillus in their naso-pharyngeal membrane or in their tonsils. The number of these bacilli-carriers will afford us precise and valuable information.

It is also to direct examination that we must turn if in a military unit, company, or squadron there suddenly appears one of those cases, often so rapidly fatal, of cerebro-spinal meningitis. In the last few years we have had in France too many opportunities of witnessing the birth and growth of such local foci of meningococcal infection, and our army colleagues are fully cognisant of their duties in this respect. In cases of this kind the systematic quest for meningococci-carriers is immediately proceeded with, and it very speedily shows whether the cases observed are sporadic or whether they are the first signs of a more or less extensive epidemic. We are thus led to form the *epidemiological prognosis*, which to a certain extent remains distinct from *individual prognosis*.

Finally, above the individual, the family, and the small communities there is the *race*, the human species considered as a whole. Now, considering as social diseases tuberculosis, syphilis, and alcoholism, if we search for the causes of aggravation or attenuation, shall we not be reaching the highest point that can be attained by medical prognosis? How far we thus find ourselves from the old belief of the physician who, having treated his patient, thought he had done all that could be expected of him. We now feel that this would be an inadequate conception of our duty, and that not unfrequently the particular patient cannot and must not be separated from his multifarious connexions with the rest of the human race. All our legislative measures in regard to disinfection and preventive vaccination find in social prognosis of disease their justification. I need not dilate on this subject in the country of Jenner, the land of efficient prophylaxis. Is it not also in this great London that as a result of the memorable work of Sir Francis Galton and his school a new science came into being, Eugenics, which held its first congress here a year ago? By improving, according to Galton's ideas, the racial qualities, both physical and mental, of the generations to come, and also by surrounding with all possible care the life of the child before and after birth, in conformity with Pinard's teaching, it seems to me that we are transferring into the domain of prophylaxis, for the greater good of the race, the notion of collective and social prognosis.

Starting, then, from the daily observation of the sick, the physician has therefore unceasingly looked higher and further. Every day he better realises that he cannot neglect the individual, nor the family, nor the race; that in a social body where so many nefarious forces are working together to bring about the degeneration of man he must bring to all men the tribute of his beneficent knowledge and useful labour.

THERAPEUTICAL ADVANCES.

Does our progressively extended prognosis, based on the use of new methods and on a wider comprehension of the far-reaching effects of disease, concern facts that are always identical with themselves? Is the prognosis of a given disease immutable? If not, why and how does it vary?

To admit the immutability of medical prognosis would be to declare that our therapeutics have not progressed. Now, surely, it is not at the present time that such a dispiriting opinion could be upheld. For the last 40 years, before our very eyes, the whole of scientific and practical medicine, undergoing an incredibly rapid evolution, has been wonderfully transformed. The problems of pathogenesis, our means of clinical investigation, our methods of treatment, have all assumed a new aspect, and the prognosis of all morbid conditions has thus been deeply modified. I think it can be said that there is almost no group of diseases the gravity of which has not been notably attenuated in recent years. No doubt there are still too many cases where the physician feels powerless; but even then his lack of power is no longer so absolute. The cancer problem is always before us, but we cannot deny that, thanks to X rays and radium, thanks to improvement in surgical technique, thanks also to recent advances in chemical treatment, our means of action have become less scanty and more often efficient. We may be unable to modify the prognosis of a given lesion: cerebral hæmorrhage and pulmonary embolism have lost none of their gravity. But the changes in the arterial or venous systems, which give rise to those serious accidents, are better known to us: we can prevent them or treat them with greater success. Thus even in the least favourable cases we have gained some ground.

On the other hand, we might quote many instances, especially in the domain of infections, where the prognosis of to-day is widely different from that of former times. Rheumatic fever nowadays is no longer what it was in Bouillaud's time: salicylic medication has made another disease of it. Since the introduction of Brand's treatment our typhoid patients are no longer the same, and the results already obtained by antityphoid bacteriotherapy enable us to look forward to a near and decisive advance. We cannot forget what diphtheria was before the discovery of diphtheritic antitoxin by Behring and Kitasato and the splendid therapeutical deduction brought forward by Roux at the Congress at Budapest. The morbidity and mortality tables have since demonstrated throughout the world what a change has been brought about in the prognosis of diphtheria. Even the most terrible and relentless of diseases, rabies, has met its master, and the antirabic vaccination of Pasteur is perhaps the most amazing therapeutical triumph of our time.

And so each day brings with it some progress, some attenuation or modification of our prognosis criteria, some new methods of fighting disease. Armed as we are with our modern methods, having at our command mercury and arsenic in extremely active forms, do we not treat syphilis with much greater chances of success than formerly? It is not my intention to dwell on this point, but I should like to recall two other quite recent and typical instances.

Consider one of the hitherto incurable forms of trypanosomiasis: *sleeping sickness*. Thornton, and later Nicole and Mesnil, demonstrated experimentally the value of atoxyl in animal trypanosomiasis. Ayres Kopke, of Lisbon, applied for the first time the treatment to the human being, and since then results have been constantly improving. At the Pasteur hospital in Paris Dr. Louis Martin has treated and followed in the last few years 40 cases of sleeping sickness, and he has kindly supplied me with his statistics. Of the first 20 cases, 11 died; of the next 10, 4 died; of the last 10 cases, none died (and yet two patients of the last series were treated more than three years after the onset of the malady). Those gratifying results are due to the improvement in the method of treatment: for large doses, separated by intervals of ten days, Louis Martin has gradually substituted smaller doses repeated more often, and success has been more complete and more lasting. We can now talk of cure in a disease the recognition of which, a few years back, was equivalent to a death sentence.

Let us now take another instance afforded by *dysentery*. We know that in this disease identical symptoms may be produced through different etiological agencies and we recognise two essential forms of dysentery, one due to bacillary, the other to amœbic infection. Therapeutical advance has not been long in confirming this distinction, and to two specific infections we now oppose two specific treatments. Bacillary dysentery is almost immediately arrested and cured by specific serum-therapy as established by Shiga, Kruse, Todd, Rosenthal, Vaillard and Dopter—to mention only the early workers in the field. As for amœbic dysentery, it now possesses also its specific treatment which, although quite recent, has already proved its high value. This new treatment we owe to a British physician, Leonard Rogers, of Calcutta. For the last 12 years Rogers has devoted himself to the study of ipecacuanha medication in amœbic dysentery, and to the demonstration of its preventive action in regard to liver abscess. Later, following Vedder's experiments, for ipecacuanha itself he substituted one of its alkaloids, emetine (or rather emetine hydrochloride), and he achieved the greatest success in curing quickly and entirely the intestinal and hepatic forms of amœbic dysentery. Whereas in dysenteries of equal gravity the death-rate for the cases treated with powdered ipecacuanha was 34·6 per 100, with emetine it is reduced to 8 per 100. With ipecacuanha the average duration of the treatment was 16·4 days, with emetine it has dropped to 7·2 days. As for dysenteric abscess of the liver treated by emetine injections, both hypodermically and in the abscess cavity, results are no less favourable, and a cure is effected with astonishing ease and swiftness. The numerous cases reported by Rogers, those observed since in the Philippines and in Paris, can leave no doubt about the fact that, thanks to Rogers, a new specific therapy is born. It is one of the most active known, and such an acquisition is an inestimable benefit, a splendid therapeutical triumph. Here, then, is another disease, and a grave one, the prognosis of which has been entirely modified in a remarkably short time.

If from infections we pass to the other groups of disease progress seems less brilliant, and the future possibilities appear to be more limited. The study of the disturbances of nutritional metabolism brings us face to face with causes more obscure, that act more slowly, and that are less favourable to therapeutical intervention. And yet, here again, our modern conquests are innumerable. Of these, we may mention organotherapy, dietetic treatment, and physical therapeutics. Everywhere disease is falling back before the ceaseless efforts of therapeutics and hygiene; everywhere prognosis is undergoing an evolution and holding out fresh hopes.

THE LIMITATIONS OF MEDICAL PROGNOSIS.

The foregoing consideration of a few of the general aspects of that great subject, medical prognosis, would appear to lead us to a very hopeful conclusion. Yet to this, as to all branches of human knowledge, there are limitations that we must not lose sight of and that are calculated to humble, if needs be, our medical pride and to bring it down to a suitable degree of modesty.

What, then, are the limitations of medical prognosis? An essential distinction must here be made between *theoretical* and *clinical* prognosis. Theoretically almost everything is known to us. In a given disease we can enumerate and describe, without serious risks of omission or error, most of the complications or contingencies that may modify its course. But all that is *book prognosis*, far removed—unfortunately—from the living and individual prognosis, applied not to a disease but to a patient. How many unknown quantities in medical practice, and how many surprises! How little does it avail to know all the possible complications of typhoid fever if at the bedside of a typhoid case we cannot foresee the intestinal hæmorrhage or the perforation which, perhaps in a few hours, may endanger the patient's life. Again, for the newly infected syphilitic, for the gouty subject, for the epileptic at his first attack, for countless other sick patients of all kinds, how many uncertainties for the future! When a morbid condition begins we know theoretically the various paths it *may* follow: but which one *will* it follow? That is the real prognostic problem, the solution of which too often eludes our grasp. Doubtless the knowledge of the inherited soil and of previous disturbances may sometimes help us; but we are ignorant of the conditions which determine the localisation of septicæmic or toxinæmic infections. No one can predict at the onset of pneumonia the pneumococcal endocarditis or meningitis that will cause death. Once the metastasis is established we cannot always appreciate the degree or the evolution of the anatomical lesion. We cannot tell whether, in a typhoid case, intestinal ulceration is growing deeper, thus threatening to cause perforation. Again, in a patient with mitral stenosis, we cannot foresee whether hæmorrhagic infarction or cerebral embolism is going to occur. And so, even in those diseases with which we are most thoroughly acquainted, prognosis remains uncertain. It is wise in theory but faltering in practice.

To all those reasons for uncertainty and prudent reserve I must add one of major importance, I mean the reaction of the nervous system. I forget what statesman once said that in politics one must always reckon with the "imponderables"; surely in medical practice this remark is no less true. The nerve cell may always add its perturbing influence to all morbid processes, whether in the sense of inhibition or of stimulation; and we cannot calculate nor master at will nervous reaction, either in the sphere of motor or sensory manifestations, or of psychical phenomena, or of visceral pain. We try to redress or direct it, but it may be impossible for us to foresee its gravity or duration.

Finally, and dominating the whole question of prognosis, there remains for us to gauge the possibilities of the organism that has fallen a prey to sickness. Shall we find in it the resources necessary for overpowering disease? How much can it stand and how much can we expect of it? That is the great problem which commands and includes all the others. Are we always able to solve it? I fear not.

CONCLUSION.

I must now conclude, and I must ask you to excuse the shortcomings of what has been, I am afraid, a very lengthy discourse.

Medical prognosis is, as it were, the corollary and the practical application of diagnosis; it borrows its methods, it follows its progress. In the course of its modern evolution it has taken its share of all the advances of scientific medicine; it has not ceased to walk in the paths of clinical analysis and of experimental pathogenesis; its aim has been raised, its scope extended. It appears as the synthesis of medical criteria; it precedes, checks, and justifies treatment and prophylaxis. If we consider the constant advances of medical prognosis and the many opportunities it affords us of ascertaining the lessened gravity of disease, we can better appreciate the progress already achieved, and our efforts will thus meet with their greatest reward and incentive.

Uncertainty and disappointment must necessarily be often our lot; but since the science of prognosis is one of the loftiest summits of medicine, we must in our ceaseless advance ever strive to behold its crowning height. Even if it remains distant and lost in the clouds, we must never despair of lessening the intervening distance. Such an ambition is a duty, and it will ever be the best stimulant to medical endeavour.

ST. THOMAS'S HOSPITAL MEDICAL AND SURGICAL COLLEGE.—The Entrance Science Scholarships have been awarded to W. E. Le Gros Clark (£150) and S. A. T. Ware (£60).

Address in Surgery

ON

REALINEMENTS IN GREATER MEDICINE:

THEIR EFFECT UPON SURGERY AND THE INFLUENCE OF SURGERY UPON THEM.

Delivered before the Seventeenth International Congress of Medicine,

BY HARVEY CUSHING, M.D., F.R.C.S. ENG.
(HON. CAUSÂ),
PROFESSOR OF SURGERY, HARVARD UNIVERSITY.

MR. PRESIDENT, LADIES, AND GENTLEMEN,—Thirty-two years have elapsed—a full generation—since this Congress, under the distinguished leadership of Sir James Paget, last gathered in London. Among the participants on that occasion were five of the immortals in the history of the medical sciences: Huxley—naval surgeon, zoologist, palæontologist, educator, philosopher, public servant; Virchow—pathologist, anthropologist, archæologist, statesman and sanitarian; Pasteur, the chemist; Lister, the surgeon; and Koch, the bacteriologist—among the foremost contributors of all time to the welfare of their kind. On the foundations which these men laid—a new conception of biology and man's place in nature; the doctrine of cellular pathology; fermentation and immunity; wound healing without suppuration; bacterial diseases—a transformed medical edifice has been erected. Methods of investigation, the direct outcome of those which they evolved, we still employ; weapons which they devised are still, and always will be, effective, not only in a hand-to-hand conflict with individual examples of many of the disorders to which man and the animals needful to his existence are exposed, but better still in their prevention.

THE RESTRICTIVE LEGISLATION OF 1876.

A few years before that meeting the profession of medicine, and particularly those concerned with its basic science, physiology, had been called upon in this city to defend themselves against the public charge of cruelty in their pursuit of knowledge. There had been no striking practical demonstration of the value to the common weal of animal experimentation such as an unenlightened public demanded—such, indeed, as an unenlightened profession expected. The defence was based chiefly on the need, even at the cost of animal life, of increased knowledge concerning the functions of the human body; but despite the warnings and protests of Huxley and a few others the restrictive legislation of which you know was passed. Since then in the British Isles, and consequently in other English-speaking countries, medicine has been placed in the absurd position of defending the character of the labours necessary for its advancement. But all this is changing, and, indeed, began to change soon after that memorable Congress of 1881. Virchow, though his great contributions had come through mortisection studies rather than through observations on the living, gave an elaborate historical statement of the value of experimentation to general pathology. Pasteur at one of the sessions presented the results of his work on vaccination against chicken cholera and anthrax; at another Koch gave demonstrations of his newer bacteriological technique. In the surgical section the question of chief moment concerned primary wound healing, and, in the emphatic discussions which followed, Lister, who had perforce been required to conduct some of his investigations in France, described his experiments demonstrating the bactericidal properties of blood serum. Between the lines of the printed reports one can easily perceive the coming transformation of antiseptic into aseptic surgery.

The seed of knowledge often finds a better soil when blown or carried to a distance, and in this instance it was across the Channel, where no discouraging blight was put upon the sort of research that is as necessary for the furtherance of surgery as for that of any other subdivision of greater medicine. For it was on the continent that the principles established by Lister took firm root, and, particularly in Germany, were so ardently cultivated through experimentation and practice that modern surgery bears a more vigorous Teutonic than Gallic or Anglican graft. And is it not due solely to this legislative restraint upon the freedom of investigation that in these 30 years this country, which has continued to produce the greatest of names in the experimental sciences free from statutory restriction, has given us few instead of many notable successors to Hunter and Cheselden, to Cooper and Pott and Brodie, to Bell and Paget and Lister, who contributed to the science no less than to the craft of surgery. It would seem, indeed, that the restrictions placed upon animal experimentation have deterred the physician and surgeon from productive laboratory investigation far more than the physiologist, whose inclinations towards research the statutes of 1876 were expressly designed to hold in check; for Great Britain's representatives of pure physiology and experimental neurology, despite the hampered conditions under which they work, stand out as the chief contributors of the generation to British medicine, though the public cannot appreciate, nor the profession for the moment fully understand, the significance of their labours.

The spirit of investigation—all too rare—should be generously subsidised rather than taxed, encouraged rather than hindered. The outcome of the experiments of one participant in that Congress of 1881 is said to have saved enough for France to enable her to pay the heavy indemnity which the outcome of a war had imposed upon her. Nature is loth to give up her secrets; discoveries do not come by chance; they are made by those only who are industriously prepared to observe them, and the inquisitorial methods of those who seek the light through experimentation, misjudged as cruel, are necessarily stern and persistent, whether the investigator deals with inanimate objects or with animate beings. Possibly Pasteur's greatest scientific triumph lay in a discovery in crystallography, but the same method of work was pursued in his studies of fermentation which inaugurated a new era in the brewing and wine-making industries; in the saving of the silkworm from a destructive parasite, of poultry from cholera, of flocks from anthrax, and in the elaboration of an effective barrier against the most frightful of deaths—that from hydrophobia. From crystals under the microscope, to yeasts, to the silkworm, to chickens and sheep, to man—and when his studies reached man, who was henceforth to be saved from the poisonous bite of his friend and ally, the dog, Pasteur was accused of cruelty to animals. And the name of this simple and loving man, acknowledged the greatest of Frenchmen, but whom France alone cannot claim, is met with hisses when mentioned on certain platforms before gatherings of presumably intelligent people!

THE SECOND LEGISLATIVE INQUIRY.

This Congress meets again in London, under circumstances similar to those of a generation ago. Again a legislative inquiry has just been forced upon British medicine by those who would abolish experimentation upon animals. But how different the testimony! It bared to the public gaze a science of medicine which in 30 years had become transformed throughout the world as a result of the very activities the commissioners were called to investigate. Medicine no longer, even as a practising profession, is looked upon as uncommunicative, consulting in the back room as though it had something to conceal from patient or family, for in the individual case the family, and in the general case the public, are not only awakened, but are sufficiently interested and informed to come into an open consultation and to share in the struggle against disease. Great funds are devoted to the purpose; great corporations are held responsible for the health of their people; formerly uninhabitable zones of the globe are being rid of their plagues; governments, civic, state, and national, not only employ the weapons of attack and defence forged in laboratories whose methods were in question a generation ago, but expect their medical officers to make progressive contributions by further researches. All these great movements, of which Huxley and Virchow and Pasteur must have had some foresight, are but expressions of the new alignments taking place in the profession of medicine—alinements which affect the surgeon no less than the physician.

THE EFFECTS ON MEDICAL PRACTICE.

It has been a seeming paradox that the medical profession has so consistently endeavoured to make of the world a place where there is [a constantly lessening need for the medical man He is, indeed, already feeling the effect

of these efforts, and as he becomes more and more a servant of the public health, and less and less a prescriber for individual ills, he philosophically accepts and humanely welcomes this outcome of medical discoveries which the experimental method has already given and will increasingly continue to give. Disorders which gave bread and butter to his predecessors are disappearing, as small-pox disappeared after Jenner. One injection robs diphtheria of its terrors, another, meningitis. Typhoid fever, which once replenished the doctor's autumnal pocket-book, is now looked upon as a civic disgrace, and where it exists or is likely to break out protective vaccination is performed against it. Tuberculosis is everywhere fast coming under State care, and the wide-spread campaign against the disease, in which those outside the profession are taking no insignificant part, is gradually lessening its ravages. The health of children attending the public schools is supervised by appointed officers; district nurses and the social service worker visit the homes of the sick and assume duties which the hospital physician long neglected; a privately endowed commission takes steps to eradicate hook-worm infection from a whole zone of the globe; an organised Red Cross Society, with Government affiliation, steps in in great emergencies; Governments see fit to pass insurance Acts which make public officials of the profession at one sweep. Dr. Pound of Cure-lane is being superseded by his young disciple, Dr. Ounce of Prevention-street.

In matters of health the people as a whole have been largely permitted to shift for themselves, and when they have forgotten how large a percentage of the faces of the eighteenth century and before were pock-marked, many of them wish again to exercise their individual discretion regarding vaccination. "Where there is no vision the people perish." Governments, though interested in the welfare of the domesticated animals, are too often indifferent to the public health, and only in the face of emergencies, the greatest of which continues to be warfare, are they stirred to action, since freedom from disease is as essential as food and ammunition in the prosecution of a successful campaign. Hence have arisen the most striking examples of the effectiveness of preventive vaccination, at first against small-pox and latterly against typhoid.

The effect of the present realinements of medicine of which I speak is particularly apparent in the case of the military surgeon, for the Parés, the Wisemans and the Larreys, the Pirogoffs, the Dupuytrens, and the Langenbecks of to-day are occupied with preventive inoculation, with the screening of the sick, the protection of water sources; more concerned with the first-aid package than with the extraction of bullets; more often called upon to use the microscope than the scalpel and ligature. Little wonder that from men of this type great contributions have come. It is a far cry from Guthrie's amputation through the hip-joint at Waterloo to Laveran and the discovery of the malarial plasmodium, or to Walter Reed and the mosquito and yellow fever.

SOME OF THE ACHIEVEMENTS DUE TO ANIMAL EXPERIMENTATION.

In the search for biological truths the God-given privilege of becoming obvious benefactors to their species comes to but few men. No one of the countless inquisitors of nature knows whether the mantle of recognition will fall upon him—or, for the matter of that, especially cares, provided he be given the personal satisfaction of having taken a step forward in knowledge, no matter how trifling at the moment that step may appear to be.

To whom is chiefly due the expectancy of recovery for the consumptive? Is it to Leuwenhoek and the microscope; to the father of Lister and to Abbé, who perfected its lenses; to René Laennec and his stethoscope; to Sir William Perkin, whose experiments with the coal-tar by-products furnished the necessary colour reagents; to Villemin, who demonstrated the communicability of the disease; to Koch, whose genius made possible the recognition and cultivation of the organism; or to Ernst von Leyden's propaganda in Germany and the United States; to Trudeau, himself a victim of the disease, through whose precepts and example tuberculosis has been moved into the open, where it is being effectively attacked in a campaign of education shared by layman, legislature, and physician alike? Unquestionably, through experimentation on animals the most important step in this progress was made—the discovery of the bacillus tuberculosis and its identification as the causal agent not only in pulmonary consumption but in the many "strumuous" and "scrofulous" disorders which puzzled our forebears.

Where will lie the chief credit for the approaching victory over the great social scourge which since its outbreak in Columbian times has undermined the vigor of the race? Will it be with those earlier men who gave us the tools of research, the microscope, the culture media, and the colouring dyes; with Schaudinn, who discovered the spirochæte; with Wassermann and the possibility of a chemical diagnosis; with Metchnikoff, who successfully transferred syphilis to the ape; or with Ehrlich, who, by his original methods, has had the triumph of synthetizing a drug possessing a special affinity for the infecting organism but leaving uninjured the tissues of the infected host? There has been nothing heretofore comparable to this relentless, persistent, certain elaboration of a chemical compound which at a single dose may destroy, within the living tissues, the organism of a dread disease. Before this all past discoveries of therapeutic agents must make obeisance, even Jenner and vaccinia, Pasteur and the attenuated virus, Kitasato and Behring in the elaboration of the antitoxins.

What would the opponents of animal experimentation of 1876 have thought could this have been foreseen, this which is only the beginning, with pneumonia and cancer still to be overcome? That the means do not justify the end? That it is unfair to the lower animals, some species of which with unquestioned cruelty man sacrifices for adornment, for sport, for covering, for food; some of which he deliberately mutilates in the process of domestication or in preparation for his table; some of which, like the infected rats and squirrels of plague-ridden districts, he must attempt to exterminate for his self-protection? But in the search for knowledge the investigator does not exempt himself as a subject of so-called vivisection when lower animals do not suffice for the purpose;[1] nor will he ever hesitate even to endanger his life, whatever may be the ethics of the question, if thereby information is likely to be gained concerning some disease fatal to his kind.

THE APPROACHING TRANSFORMATION OF THE TROPICS.

To whom is due the approaching transformation of the tropics into a possible habitat for civilised man? Again, a series of investigators on investigators' shoulders, until Theobald Smith, in the case of the tick-infected cattle decimated by bovine malaria (Texas fever), in 1893 showed for the first time that a parasite might be an essential intermediary host in the transfer of a disease from animal to animal. Promptly all blood-sucking parasites of man became objects of suspicion, and ere long convictions followed—first in the case of filaria by Manson, then Ross's demonstration that the mosquito is also an essential link in the cycle of "million murdering" malaria[2]—a discovery which was made possible through his studies of infected birds. But when it became necessary to establish unequivocal proof in the case of man, the younger Manson, and Warren, of the London School of Tropical Medicine, did not hesitate to submit themselves to the bite of infected mosquitoes sent for the purpose to England from the Roman Campagna. It is hardly possible for one unfamiliar with the experimental method and its necessary tedious controls to conceive of the patient, unflagging, time-consuming labours on the part of many investigators the world over, often conducted in most unhealthy districts and in the very shadow of death, which step by step were required to lead to this final demonstration—labours which in review seem almost beyond

[1] Henry Head's important studies on the sensory disturbances produced by a purposeful division of a nerve in his own arm may be given as an example.

[2] These significant lines, too little known, were written by Ronald Ross on the eve of the discovery:—

This day relenting God
Hath placed within my hand
A wondrous thing; and God
Be praised. At His command,

Seeking His secret deeds,
With tears and toiling breath,
I find thy cunning seeds,
O million-murdering Death.

I know this little thing
A myriad men will save.
O Death, where is thy sting?
Thy victory, O Grave?

the possibility of accomplishment. The discovery of the malarial plasmodium of the blood, the determination of its several varieties, the study of the sexual cycle of its development, the observation of the changes in the stomach wall of the mosquito and the final lodgment of the sporozoöites in the glands of the proboscis, the recognition of the particular species among the many genera of mosquito concerned, the establishment of the fact that the female alone is the active agent, the finding of the length of time necessary for infectivity—each step, whether made by Frenchman, by Italian, by Canadian, by Englishman, or by German, was a triumph of the spirit of research, and no great objection is raised if, in the process, the mosquito, bird, and man are the subjects of experimentation.

Soon the participation of another species of mosquito in the transmission of a still more dreaded disease was demonstrated in Cuba by the United States Yellow Fever Commission, at which time Carroll, Lazear, and some brave volunteers from the ranks permitted themselves to be bitten by infected parasites—the lamented Lazear dying a victim of the disease he had invited. The imagination of the public is only beginning to respond to these acts of heroism constantly being performed by investigators the world over—performed for humanity's sake, and surely no less, but even more heroic than the quickly applauded dangers risked in warfare for the sake of country alone. Far better could our proof of the transfer of yellow fever through the bite of the stegomyia have come through the sacrifice of lower animals had animals susceptible to the disease been available for the purpose, but to the members of that Commission there seemed no alternative to experimentation upon human volunteers. And what have been the results? Pestilential districts become habitable; commerce with tropical ports, once annually quarantined because of the recurrence of a dread scourge, continues the year round; across an isthmus formerly plague-ridden two oceans are being joined, where under a former *régime* shovels alone, without drainage and screens, proved utterly unavailing.

And after the cattle tick and the mosquito, other biting parasites—the flea and the bed-bug, the fly and the louse—have risen in dignity from a disgrace to a menace.[3] Immediately the patient studies of the insect world by the entomologist, disturbed from his quiet seclusion as a systematist into active participation in medical problems, become of the greatest practical value, and under the wing of preventive medicine his specialty, like that of the helminthologist and protozoologist, becomes as essential to the medical curriculum as was that of the botanist a century ago. These are astonishing changes to have been brought about by the experiments of one modern scientist who had the training, the imagination, and the patience to investigate the ticks of cattle afflicted with a destructive plague, and after four years of laborious study to identify them as essential agents of the disease.

THE BENEFITS DERIVED BY ANIMALS.

Herein, it seems to me, lies the weakest point in the opposition to experimentation on the basis of cruelty—namely, that the animals whose preservation is desirable benefit from these investigations as greatly as man. There is no more notable example of this than in the case of man's companion, the dog. Through the deserved attachment which has grown out of this companionship a sentiment has arisen which would exempt the canine species from experimentation. But had such a law been put on the statutes, Copeman's discovery of the bacterial cause of distemper, and of a successful method of inoculation against this most fatal and distressing canine disease, would have been impossible; and the same is true of the fatal malignant jaundice—a parasitic blood disease conveyed by the bite of the dog tick, which is so prevalent in some parts of the world as to make the rearing of dogs impossible, and for which Nuttall has found an effective remedy and means of prevention. What a credit it would have been to the societies for animal welfare could such discoveries have come through their own efforts rather than through the efforts of those whose methods of research they are prone to question!

Large sums of money have been wisely devoted to the prevention of cruelty to animals, and much good has been done in the past, but by a strange process of evolution most of those now entrusted with these funds, instead of grasping the opportunity to advance knowledge of the diseases of animals, have devoted their energies to opposing such advance as may be undertaken for the sake of man at some expense to animal life. The future offers a great opportunity for these societies, whose capital is now largely expended, on the one hand, in the wholesale sacrifice of stray and diseased animals, and on the other, in destructive criticism of the methods of those they call vivisectionists; for by constructive investigation and by the employment of the same methods which have been elaborated by those whose primary object is the study of the diseases of man, they may become as great benefactors to animals, and incidentally to man, as the medical scientists have been to man and incidentally to animals. There could be no better outlet for the present wasteful methods of many of these organisations than the establishment of veterinary hospitals in which modern methods of treating disease could be employed, further investigations made, and students of veterinary medicine taught—the three great functions of any hospital; and there is promise in some communities that this wise step may be taken.

Though less true of many European countries, where veterinary institutes which are doing admirable progressive work are under Government control in close association with universities, in the United States, and I think the same is true in a measure of Great Britain, most veterinarians have profited not at all by the advance in general medical knowledge of the past generation. This applies particularly to veterinary surgeons who still trust, in the operations which they venture to undertake, to the rough and casual methods of old, with scant if any pretence to the modern refinements of skilful anæsthetisation and aseptic surgical technique. Little wonder that people who are aware of this difference prefer to have their pets, when in need of surgical care, operated upon in an experimental laboratory rather than in many of the established veterinary hospitals. Some years ago, in the surgical laboratory at Johns Hopkins, this work grew to such proportions that a course covering the technique of operative procedures was offered to a group of veterinarians, who there for the first time learned methods which would enable them to save valuable animal lives by procedures which they had considered impossible, and which for the general run of veterinary surgeons had been impossible.[4]

THE ELIMINATION OF PAIN.

When himself a victim of an operable malady man voluntarily submits to a surgical operation, which is nothing other than vivisection, aware that the momentary risk and temporary discomforts—happily far less than they were of old, despite the increasing magnitude of the procedures which are undertaken—are but a small payment for the possible and probable ultimate good. And most experimental procedures in the laboratory to-day are conducted on the same principles and with the same precautions that are observed in the hospital operating-room, and the rewards of experimentation, largely for these reasons, are greater than ever before. This is one of the great contributions which the surgery of Lister has made to the advancement of the medical sciences—a contribution as great as that represented by the immediate benefit to the stricken patient no longer liable to the dangers of wound infection. It does not seem to be realised by the opponents of such forms of research as entail experimentation upon animals how few individuals undertake it, for the work requires elaborate

[3] Parasitism comes to have a far broader significance in relation to medicine than is covered by bacteriology alone, and from its widespread existence in nature, among plants as well as animals, and from the fact that "every parasite has near relatives that do not possess the parasitic habit," it may be assumed that these habits are acquired, and that consequently some diseases may be of recent occurrence and that still others may arise anew. Metchnikoff has even suggested that among parasites we may look for the latest products of evolution. It is a far cry in the history of parasitism from the first given example—the mistletoe by Pliny—to a hæmatozoon, one cycle of whose development must take place in the body of a blood-sucking intermediary host.

[4] It was during this laboratory course that a woman prominent in the local antivivisection circle, who owned a number of cherished and interesting dogs, brought one of them, a valuable bull-terrier, to be operated upon for an extreme vaginal prolapse—one of the complications of whelping incidental to these highly bred pets. The owner was so gratified by the result that the animal and one of its mates were subsequently brought to the laboratory to have their ears pointed and tails docked—a request which was of course refused. Such are the inconsistencies of mankind!

preparation, expensive and delicate apparatus, is time-consuming and fraught with baffling disappointments. Ehrlich experimented with 605 synthetically prepared chemical compounds before salvarsan was attained. Painful experiments were necessary before anæsthesia, just as painful surgery was necessary; and the extraordinary thing is that the physiologists of the days before surgical anæsthesia and reactionless wound healing ever learned from animals what they did of the functions of the human body, for the solution of the problems of digestion, circulation, secretion, and nervous action cannot satisfactorily be undertaken if the subject be emotionally disturbed or suffer pain or be not gently and properly cared for. Whatever the conditions may have been in the past the opponent of research need have no apprehension to-day on the score of the elicitation of pain. And in this connexion is it not extraordinary to recall now the protests once raised by poets, divines, and even physicians themselves, against the banishment of pain by ether and chloroform—for had not man been fashioned to suffer?

Experimental therapeutics will in time doubtless give us the ideal anæsthetic in the form of a drug possibly allied to chloretone or scopolamine, a single injection of which will induce a prolonged insensitive sleep, perchance of long enough duration for primary wound healing to occur. Then will the surgeon's sense of responsibility, whether in laboratory or clinic, be greatly lightened, for undoubtedly to-day inhalation anæsthesia itself gives him his chief anxiety, and his patients, whether animal or man, their chief discomforts. Still, in spite of its present defects, anæsthesia—and it is a pity that there is no one man to whom we can unqualifiedly attribute its discovery—shares with Lister the credit of having made of surgery the most important agent which we possess for the cure of disease. Its principles are so definite, its technique so easily acquired, its performances in the long run so safe, that as a therapeutic measure human vivisection—to use this cruel word in a sacred sense—has almost wholly lost its terrors. The triumphs of surgery stand beside those of hygiene and preventive medicine as the notable medical achievements of these 30 years.

THE RELATIONS OF MEDICINE AND SURGERY.

Of the new alinements which have been the outcome of this modern surgery I particularly wish to speak. Is it not a striking fact that the health officers comprising the medical corps of our armies and navies—men who have a medical degree and who may be called upon in an emergency to practise any branch of greater medicine—are called surgeons? I have indicated in some of the preceding paragraphs how far their activities may be removed from handicraft, supposed to be the chief business of surgeons. Though formerly this may have been their sole occupation, they are now coming to use more the armament of the scientific physician and public health officer.[3] Thus the army medical officer, unhampered by tradition, more nearly fulfils the office of the Greek physician, who, as Sir Clifford Allbutt has so well said, had no more scruple in using his hands in the service of his brains than had Phidias or Archimedes; whereas his brother in civil life still adheres to the traditions of the times when the manual and debasing craft of surgery was cast off from medicine.

Surgery by force of circumstances groped its way alone through the dark centuries—a craft largely devoted to the repair of wounds and injuries inflicted in warfare. But its principles were sound, its growth steady—until now, and particularly in the past generation, it has rapidly developed into the most generally useful therapeutic measure which the physician has at his command. Its principles, moreover, are as profitably employed by the investigator in his laboratory as by the clinician in the case of an individual the victim of disease. It has served to break down medical sects and systems, such as Hahnemannism, for what principle of homœopathy justifies the use of scalpel and forceps? Indeed, surgery has been one of the great factors in the present realinements of medicine, for from Lister and Pasteur as their fountain head the great streams of progress have flowed, in the case of the individual, into the art of surgery, and in the case of the community, into prophylactic medicine. Even the physician, who for so long held himself aloof from anything savouring of handicraft, returns to it with that useful instrument the hollow needle; and paracentesis, lumbar puncture, and the extraction of blood for diagnostic, or the administration of drugs and sera for therapeutic, purposes by a minor surgical act are an acknowledged part of his therapeutic resources. By a strange transformation, too, he has become the phlebotomist, and the venesections and cuppings, formerly the overworked province of the barber-surgeon, are largely practised by him to-day.

Billroth said some 30 years ago, "Die innere Medicin müsse mehr chirurgisch werden," and this seems to be what is taking place. Before Billroth's time it was largely internal medicine *versus* external surgery, for operative measures were necessarily confined to the exposed parts of the body; the visceral surgery of to-day—the larger part of the present surgeon's work, in the inauguration of which Billroth himself played no inconspicuous part—was then inconceivable.

MODERN SURGERY AND THE FORMATION OF SPECIALTIES.

We still retain many of the traditions of those earlier days, days when a pure craftsman, steeled to act in the face of unanæsthetised suffering, amputated, removed surface tumours, ligated vessels, cut for stone, and treated fistula, and a few other ills with an unerring hand and unbelievable speed. The high-road to surgery was through the anatomical dissecting room, and in these surroundings the operations of surgery were then, and are still, largely taught, with the result that the rule-of-thumb operations of one generation are handed on to the next, who will never use them, owing to the extraordinary progress ever making in these measures due to methods of asepsis and the increasing knowledge of surgical possibilities. To-day an individual of wholly different temper from the surgeon of old ventures to do operative work, and the essentials for his training are of an entirely different order. Descriptive anatomy, useful as it may be to him, is no longer a prime requisite in the terms of the past generation, but his knowledge of visceral physiology and pathology must be broad, his observations of asepsis unimpeachable, his skill in hæmostasis and handling of the various tissues delicate and painstaking. As a training ground the anatomical dissecting room fast gives way to the experimental laboratory.

An entire change in the character of surgical workmanship has been the striking transformation in the surgery of the past decade or two. The accurate and detailed methods, in the use of which Kocher and Halsted were for so long the notable examples, have spread into all clinics—at least into those clinics where you or I would wish to entrust ourselves for an operation. Observers no longer expect to be thrilled in an operating room; the spectacular public performances of the past, no longer condoned, are replaced by the quiet, rather tedious, procedures which few beyond the operator, his assistants, and the immediate bystanders can profitably see. The patient on the table, like the passenger in a car, runs greater risks if he have a loquacious driver, or one who takes close corners, exceeds the speed limit, or rides to applause.

And in all of this new visceral surgery it seems to me that the physician has merely come to do his own surgery, that internal medicine is merely becoming surgicalised, much as military surgery has become largely medicalised. In the breaking up of greater medicine into its clinical specialties, the primary cleavage gave us the physician and surgeon, with medicinal *versus* manipulative forms of treatment as their essential distinction. Chiefly on anatomical lines each of these major subjects has broken up into a second or even a third order, but in the case of these further subdivisions it is to be noted that there is an inevitable tendency for operative therapy to become attached thereto, so that we have the ophthalmic or aural or laryngological surgeon, the gynæcological, orthopædic, genito-urinary, or neurological surgeon, according to the direction whither opportunity or training or inclination may have led. Even the obstetrician—the half-brother of the physician and surgeon—reaches out for the operative side of the diseases of women, with the complete *Frauenklinik* in mind.

THE TENDENCY OF INTERNAL MEDICINE AND SURGERY TO TO CONVERGE.

And what is happening in these specialties is an indication of the tendency in the two major branches; for internal medicine and surgery, as the treatment of disease grows less

[3] One should, of course, not forget in this connexion Sir John Pringle, the originator of the Red Cross idea, who may be regarded as the founder of military medicine, and whose volume, "Observations on the Diseases of the Army," London, 1752, is one of the medical classics.

empirical, unquestionably tend to converge. Having the same preliminary training, possessing the same diplomas, the graduates of our schools gravitate toward surgery if handicraft appeals, otherwise toward medicine, but in habit of thought and general attitude toward disease there is little difference to-day between the higher order of physician and surgeon. Though possessing a strong distaste for the act of operating itself, many physicians have admirable surgical judgment and are perfectly capable of the surgeon's craft, just as a well-schooled surgeon should be capable of practising the physician's art. The basis of their training has been the same, and their divergence to-day comes about only through occupational likes or dislikes. Both have the same familiarity with the more common disorders—those of the abdominal cavity for example—and indeed the surgeon, provided he devotes the time he should to the preliminary study of his case, is apt to hold the advantage over his medical colleague in this regard, unless the latter industriously follows his patient to the operating table, where, as is known, he can often learn from living pathology much that was impossible from the pathology of the post-mortem room.

A clinic, let us say on aneurysm, is given in very much the same vein by both physician and surgeon, and their common road forks only at the post of treatment, where down one (and the longer) path beckon Valsalva, Tuffnell, and Balfour, to rest, a low diet, and potassium iodide, and down the other (and shorter), Hunter, Corradi, and Matas, to some method requiring exposure of the lesion through an incision. The internist has learned that effective operative work cannot be done well for him by one who merely represents his hands, and he would not venture to refer his patient with obstructive jaundice or hæmaturia or pyloric stenosis to a mere operator who did not have the same knowledge of and the same attitude toward the pathological lesion of liver or kidney or stomach that he himself has. This, in other words, is equivalent to the physician's doing his own surgery, for I think it is stupid to say, as has been said, that the surgeon has taken the appendix and gall-bladder, and now the stomach, thyroid, and brain, and threatens to take the lungs and cardiovascular system and so on, away from the physician. It means merely that as the physician becomes more and more a craftsman and user of instruments of precision, internal medicine and surgery tend to draw together and to overlap, as they have not done since the thirteenth century, when the physician-priests were debarred by ordinance from undertaking any operation involving the shedding of blood.[6]

In no subdivision of medicine has this been more apparent than in the difficult subject of neurology—a subject which has been conspicuously poor in therapeutic resources. Time was—and not long ago—when under the direction of the neurological diagnostician who mapped out the field of operation on the scalp, blundering attempts were made by the surgeon to do cranial surgery for him. The combination was an utter failure, for the same reason that similar combinations had always proved failures before. Not until the operative possibilities of neurology were taken up by those possessing some preliminary knowledge of, and interest in, the nervous system and its diseases, as was notably the case with Sir Victor Horsley—in other words, not until certain neurologists began to do their own surgery—did the recent rapid strides in this direction come about.

THE POSITION OF SURGICAL SPECIALTIES.

To-day a school of operating neurologists is being trained to continue this work, for as promising a future lies before intracranial as lay before abdominal surgery; but the error must not be made of permitting surgical specialists to enter this or any other restrictive field of operative endeavour without a broad preliminary training in medicine and general surgery. This mistaken course, critics say, has been pursued in some of the established surgical specialties. That they may lose sight of the patient in their expert knowledge of the disorders of a certain portion of his body is a natural tendency of those who particularise in their work at too early a period. This undesirable attitude can be forestalled only by a long apprenticeship in general medicine and surgery before specialisation is undertaken, and by subsequent contact and free exchange of ideas with those who continue in more general work. Indeed, the existence of the operating specialist as contrasted with the general surgeon is justified only if the former take advantage of his opportunities to contribute to the knowledge of the disorders he specially treats. When progress ceases to be made, through the intensive studies which the smaller field of work permits, there is every reason why the vagrant specialty should be called back under the wing of its parent, general surgery, from whom in no circumstances should it ever be permitted to wander too far.

The surgical specialties, to change the figure, should represent merely grafts on the parent stem, for in their cultivation as separate plants they may cease to blossom and to bear fruit. Indeed, the establishment of subdepartments as offshoots of general surgery in a given hospital is justified solely by the promise of productivity of the individuals around whom such subdepartments are permitted to grow, but with no anticipation that a successive line of equally competent individuals will be found to justify the continuance of this or that specialty in perpetuity. It has been said that "the specialist should be a trained physician, a skilled surgeon, and something more, but he is often something else—and something less." One thing which has kept the so-called general surgeon from getting a distorted image of his patient's malady—a vice of which the specialist is often accused—is his wider experience with disease affecting the body as a whole; and it would be rejuvenating to many of the surgical specialties if they could be periodically absorbed by general surgery, to be born again under the leadership of individuals who through fresh contributions could give a new impulse to a senescent subject. On this basis there are any number of fields which under cultivation could be made to yield abundant crops; for the blood-vessels, joints, thoracic viscera, ductless glands, and much else are as deserving of intensive study from the operative standpoint as were the pelvic organs, the nose and throat, or the genito-urinary apparatus.

And for those who, on this basis, prove worthy of the opportunities of specialisation and for whom every possible facility, in laboratory and clinic, should be given for intensive work, the most satisfactory rewards are open. In commenting on his thyroid investigations the celebrated Pirogoff once said to Professor Kocher that "the most perfect satisfaction which one can have in medicine comes through the thorough study of one special chapter in every direction and from every point of view, clinical, histological, physiological, and pathological." No knowledge, or experience, which in fragmentary fashion may cover a multitude of ills can be comparable to this thorough familiarity with one subject from every possible aspect.

THE ADVANTAGES OF INTER-INSTITUTIONAL VISITATIONS.

Still, the general surgeon is by no means exempt from the frailties of the hereditary specialist. He, no less than others, easily becomes the slave of local custom, a creature of habit, who accepts innovation with reluctance. The customs, good and bad, of a surgical department are easily handed on from chief to house officer, to clinical dresser, with little change from generation to generation. Customs which once were good may have staled, and those whose vision is limited to the walls of a single institution be unaware of it. At the beginning of the present century, 20 years after it was deemed unnecessary by its originator, the carbolic spray was actually to be seen in use in a famous hospital.

A certain loyalty to the methods of a locality, and even to those of an individual hospital, is apt to be cherished and suspicion cast upon the hearsay methods and results of other, and possibly rival, clinics. This, I am told, was formerly true of your great London hospitals no less than of others. New technical principles, unless they have been observed and their value appreciated, find their way slowly from institution to institution. Reading of methods will not suffice; the objective exchange of ideas which can come through demonstration alone is necessary. The rubber glove was in general use in Halsted's clinic for 20 years before it was adopted elsewhere. Those who had not visited his operating room scouted the idea. What was to become of our prized *tactus eruditus*? But onlookers gradually became disciples,

[6] By no means should this idea be distorted into an encouragement for doctors with insufficient technical training to undertake their own operations; and I understand there is a widespread tendency in some districts for them to do this, brought about in all likelihood by the fact that with his diminishing practice many a lesser physician feels that he can no longer afford to "turn over" his operative work to another.

and now this useful safeguard is so generally employed that the very source of the idea is forgotten.

"Surgical instinct" and the "educated touch" have been overworked shibboleths which have stood in the way of many innovations, particularly those which concerned the introduction into practice of instruments of precision. As told in rhyme by Oliver Wendell Holmes, fun was poked at Laennec and his newfangled toy, the stethoscope. Probably Floyer heard a protest against the "pulse watch" and Wunderlich against the thermometer; only yesterday it was raised against the instrumental measurement of blood pressure. Had not the hand been industriously trained to estimate the degree of fever by contact with the patient's brow, and the fingers the quality of the pulse at his wrist? Even the Roentgen ray brought misgivings to those skilled in the elicitation of crepitus from fractured bones.

The tendency to disparage the so-called accurate or "scientific" attitude in medicine and to make much of the "practical" doctor or surgeon who is superior to the microscope and other laboratory accessories is rapidly passing. It was one of Paré's canons that

> Science sans expérience
> N'apporte pas grand assurance.

But the confidence which is bred of practice uncrossed with science is still less dependable. Abraham Flexner states that during his study of the North American medical schools he heard much talk of training the practical rather than the scientific doctor, and remarks that the chief difference between them, as far as he can see, is that the scientific doctor is less likely to lose his patient. Most progressive surgeons of late years have adopted the wise custom of frequent interinstitutional visitations, and this custom of attending the clinics and observing the methods and workmanship of others has done much to reconcile these opposed points of view.

To make this habit more effective than was possible when indulged in by an individual alone, just ten years ago a small group of surgeons in the United States formed a *Wanderbund*, which at stated intervals has since visited, in rotation, the institutions of the six or eight important medical centres represented in their organisation. At those exercises no papers are read, but a concerted effort is made by the local members of the society and their colleagues to open their clinics, laboratories, and class-rooms for inspection while under full operation. Thus, as in our student exercises, the present educational tendency is less and less toward subjective and more and more towards objective methods of teaching, so the success of the organisation I mention has demonstrated that the same principle is equally applicable to medical societies. Similar travelling groups have come to be established in other divisions of medicine and in more specialised branches of surgery, and I believe, too, that the idea has taken root in England and other countries. From its foundation the object of our society, inasmuch as its members were mostly teachers and investigators as well as surgeons, was threefold—to observe the methods of instruction pursued by their colleagues in other cities, to follow at first hand the progress of their laboratory studies, and to attend their surgical procedures in the operation room. Our early peregrinations disclosed very obvious differences in surgical habits, thought, and workmanship among the various institutions represented in the society membership—differences, however, which in the course of a few years largely disappeared. Unquestionably, there is now more nearly equal, and a much higher level of workmanship throughout; and as the members of the organisation in one capacity or another are in the position to pass along the instruction which they have received, this will have not only a broadening effect on the surgery of the present, but a still more marked influence on the surgery of the next generation. Such a clinic as that of the Mayo brothers, where may be seen a composite of the best in international surgery, is a good example of the effect of sympathetic, intelligent, and systematic inspection of the work of others.

THE WIDE APPLICATIONS OF EXPERIMENTAL PATHOLOGY.

As I have said, the application of surgical principles, whether in laboratory or clinic, is constantly becoming more general. The slipper of surgery has been found to fit that Cinderella of medicine, experimental pathology, whose coach now has devoted outriders representing all departments. Observations which, even in the hands of a Bernard or a Cohnheim, were impossible before the era of reactionless wound-healing now become possible; not only may the counterfeit of conditions of disease be produced and studied without the complicating element of sepsis, but with surgical methods the Pawlows and Carrels of the laboratory bring about altered conditions which shed new and important light on physiological processes.

All this has led to the establishment of special laboratories of surgical research, where modern operative methods are particularly applied, but as a matter of fact they are nothing more than laboratories of experimental pathology, or better still of *experimental medicine*, as the Institute in St. Petersburg and the Hunterian Laboratory in Baltimore are called. The establishment of similar institutions elsewhere indicates that an increasing number of surgeons to-day have instincts which lead them into the broader aspects of disease and away from the mere operative tasks that formerly kept them in the dissecting-room. Other than this there is no special significance in these laboratories, where investigations are undertaken which are as appropriate for anatomy, physiology, bio-chemistry, or pathology as for medicine or for surgery.

Indeed, the definite boundaries formerly separating these subdivisions of the curriculum have become so overgrown by surgicalised experimental pathology that it is sometimes difficult to tell when the investigations of one department are trespassing on the preserves of another, nor does it much matter if the common goal is the advancement of medical knowledge. This unquestionably is a development in the right direction, for it is a peculiarity of the medical sciences, as Huxley once remarked, that they are independent in proportion as they are imperfect. Even anatomy, long a purely descriptive science, is adopting the experimental method. At Johns Hopkins a professorship of *physiological* anatomy has recently been established, and the Carnegie Institution has founded an institute of experimental embryology and has put a great anatomist at its head. These are straws of promise for the future anatomist, and he will be brought into closer contact than before with the physiologist, the pharmacologist, and the pathologist, who themselves already touch elbows so intimately that many of the problems which engage one of them might suitably be undertaken in the laboratory of one or the other of his colleagues.

In consequence of this lessened departmental insularity, all react far more quickly than heretofore to a ray of light disclosing some new aspect of disease, just as they do to some novel method of study which reopens a door long closed against profitable investigation. The glands of internal secretion and their inter-relations, brought to the fore primarily through the clinic; the principle of intravital staining, with all its promising ramifications, introduced by the experimental therapeutist; the studies of cellular physiology which refined methods of tissue-staining promise to make so fruitful; and the growth of tissues *in vitro* by the experimental anatomist; these occur as immediate illustrations. Indeed, the possible prompt application by the clinician of many of the discoveries made by his colleagues in the medical sciences, as well as the fruitfulness in turn of the hospital clinic in problems suitable for the pure scientist, have served to realine them so that in some institutions the physiologist and pharmacologist have wisely been given posts comparable to that long held by the pathologist alone. Thus, through experimental or physiological pathology—or by whatever term one may wish to designate the present rejuvenation of a method which is having such a strong influence in the unification of their labours—biologist, morbid anatomist, therapeutist, hygienist and sanitarian, physician and surgeon alike, are brought into closer copartnership than has heretofore been thought necessary or advisable. And as the physician and surgeon develop under the influence of a closer contact with their brethren of the non-clinical medical sciences, the leaders of these two branches will of necessity come more and more to hold an academic attitude toward their posts. This inevitable tendency, so far as our hospitals and schools are concerned, will have a revolutionising effect on clinical medicine and surgery. The change cannot be made in a moment, any more than it was possible in a moment to place anatomy and physiology and the other preclinical sciences on a full-time academic basis, but once established we would no more recede to the earlier

conditions, where energies were divided between school and practice, often to the detriment of the school, than we would now in the case of the so-called scientific branches.

THE ORGANISATION OF HOSPITALS AND MEDICAL SCHOOLS.

And this brings me to the final subject on which I wish to touch, one which of late has aroused much discussion and has been thoroughly ventilated here in London before the Commission on Medical Education—namely, the relation toward the hospital and medical school to be held by the new order of physician and surgeon and their junior associates. Herein lie problems a source of anxiety—to many—problems, however, which will not be solved by shunning them. Our great public hospitals have ceased to be grievous and infected places, and people are rapidly losing their dread of them. Meanwhile, as disease becomes better understood, the complexities of its accurate recognition and successful treatment become ever greater and require the studies of an increasing number of co-workers—a situation which makes a most unsatisfactory matter of the office or home consultation. In consequence, people in greater and greater number desire when ill to enter institutions for study, and this applies to the well-to-do as well as to the poor. Consider, for example, the present-day methods essential for the recognition and treatment of a single disease, which with its varied complications is possibly not only the most prevalent one the doctor encounters, but which has been regarded as the one most easily prescribed for. Indeed, so definite and so effective were his therapeutic measures supposed to be that the shabby habit was acquired of making the administration of iodides and mercury serve as an aid to diagnosis—a habit which often led to added confusion. To-day the clinical acumen of the practitioner, experienced though he may be, has given way to a chemical test by a laboratory expert, and only when the disease is thus proved to exist is a diagnosis accepted. The discovery of the spirochæte and the study of its biological habits have taught us that in certain parts of the body, especially the central nervous system, the organism is not accessible to the former methods of treatment, or, indeed, if reached, that it may have acquired an immunity and resistance toward the very drugs supposed to destroy it.

Let us suppose that the malady has taken the form of a cerebral gumma. The patient has headaches, and there is a suspicious clinical history. What is required? A lumbar puncture, a cytological study of the fluid, and the Wassermann test requiring one specialist; an ophthalmological and perimetric examination needing another; a neurologist certainly, for a careful study is necessary to determine if possible the situation of the lesion; probably, too, a roentgenologist; and in the end, perhaps, another to administer salvarsan; or, in the case of a non-absorbable fibrosyphiloma, as likely as not an operation will finally be needed. And this for what was yesterday a simple problem, easily faced by the practitioner single-handed! Thus, scientifically accurate diagnostic measures and a new form of therapy requiring blood-letting and manipulative skill make a craftsman even of the syphilographer. This is a far cry from a written prescription, a bottle and spoon.

No, the practitioner cannot be chemist, neurologist, bacteriologist, ophthalmologist, radiographer, surgeon, and what-not rolled into one, and do effective work. The Jonathan Hutchinsons of the profession are, alas, rare. And as the coöperation of those expert in special lines becomes more and more necessary the tendency will grow for these conjoint studies of individual cases of disease to be carried out in properly equipped hospitals, where the data essential for a diagnosis can be more quickly and effectively accumulated and the paraphernalia for treatment kept in smooth running order from constant use. This is particularly true in as far as it concerns surgery, for in proportion as this form of therapy is the more dangerous, so much the more need is there for surrounding it by every possible safeguard against misuse or accident.

The more difficult and complicated problems of disease will gravitate to large institutions where no longer "visiting" appointees but directors of hospital units in continuous service unhampered by an ill-adapted hospital administration can uninterruptedly devote themselves to their work without entering into competition for practice beyond the walls of the institution. For when advantage is taken of a hospital appointment to make it a high road to practice, the visiting physician or surgeon immediately becomes a less valuable institutional servant, if for no other reason than through the dissipation of his energies. When this abuse is widely corrected the family physician of old, so rapidly passing as a type of practitioner, and than whom no more useful member of the community ever existed, may again come into his own, with an even larger and better field than before, quick to take advantage in his more difficult and serious problems of institutions where the chiefs of service are in no sense his competitors, but rather his coadjutors. Owing to the present dismemberment of medical practice into its many specialties the public has begun to feel that there is no balm and no physician in Gilead.

Meanwhile it will be the *energetische imperativ*, to use Ostwald's symbol, of the paid hospital incumbents to take advantage of their opportunities to observe and investigate conditions of disease for other and higher reasons than the expectation of financial returns from competitive practice. They will also instruct and be instructed by their full-time junior associates, and these in turn by the student body, without whose actual aid and stimulus a properly modelled hospital organisation can hardly survive, and who in return will receive, in addition to the advantages once attached to the old apprenticeship system, the added benefit of contact with the active work of coöperating departments.

The cry has been raised that this evolution of the physician and surgeon will make teachers incompetent to instruct those who are to enter practice, but this same cry was once raised against the appointment of the full-time physiologist, anatomist, and pathologist, whose loss of contact with practical medicine, it was presupposed, would disqualify them on these same grounds. After all, is not the essential thing to inculcate in the student's mind the habit of acquiring clinical knowledge for himself? And there is no possible way of doing this except by bringing him into immediate touch with the sick-bed. This, in the terms of Huxley, makes for centrifugal education, whereas our customary methods are centripetal in direction, with the effort to drive formulas into the student's head rather than to teach him how to produce ideas of his own. In an address on this subject Henry Fairfield Osborn aptly said that "the measure of a teacher's success lies in the degree with which ideas come, not from him, but from his pupils."

CONCLUSION.

These, then, are some of the transformations and realinements which are taking place in medicine, and which, directly or indirectly, have come through the great contributions made a generation ago by those with whose names this address was introduced; the public is not only awake to the great developments in medicine which animal experimentation has made possible, but ready to participate in their application for the general welfare; the physician at large, the valued family adviser, is reaching out toward the important problems of hygiene and preventive medicine, while the individual patient, as the complexities of disease unravel, needing more and more specialised and more and more surgicalised treatment, is gravitating toward the modern hospital; the departments of the preclinical medical sciences, which formerly existed in splendid isolation, find their fences down, owing to the levelling influence of experimental pathology; hospital organisations are undergoing changes which will ultimately require the full time and continuous activity of those who serve them for the benefit alike of student, of science, and of patient. The kaleidoscope of medicine is turning; these are merely some of the present rearrangements of the images as I see them—new patterns from original fragments—for "Is there anything whereof it may be said: See, this is new? It hath been already of old time, which was before us."

THE SUSSEX UNIVERSITY COLLEGE.—A considerable sum of money bequeathed to Brighton by the late Mr. Philip Hedgcock, which was allocated for the treatment of consumptive patients at the borough sanatorium, having been released by the operation of the National Insurance Act, the Brighton Town Council has granted £1000 to the executive committee of the proposed University Extension College towards the £50,000 required in support of the movement. Medicine will be one of the departments of the college.

THE VALUE OF TUBERCULIN IN PULMONARY TUBERCULOSIS.[1]

BY SIR JAMES K. FOWLER, K.C.V.O., M.D. CANTAB., F.R.C.P. LOND.,

CONSULTING PHYSICIAN, MIDDLESEX HOSPITAL, BROMPTON HOSPITAL FOR CONSUMPTION, AND KING EDWARD VII. SANATORIUM, ETC.

IN considering the value of a remedy in the treatment of any disease it is obviously necessary to be certain that the cases treated are examples of that disease. The only certain test during life that a person is suffering from pulmonary tuberculosis is the presence of tubercle bacilli in the sputum, and all statements dealing with the value of tuberculin in that disease which are based upon any other test are for the particular purpose fallacious. The results of a prolonged and careful trial of old tuberculin in pulmonary tuberculosis conducted by eight physicians at the Brompton Hospital in the year 1891 were summarised thus: 1. That tuberculin, if introduced under the skin, speedily causes inflammatory changes in and around tubercular lesions. 2. That the action of tuberculin in lung tuberculosis is to cause breaking down of the tubercular masses and of the lung tissue in the neighbourhood, and thus to promote the formation of cavities. That this is the case is proved by (*a*) the appearance of lung tissue in the sputum, where it was previously absent, and (*b*) by the physical signs of cavity replacing those of consolidation. 3. That tuberculin increases the amount of expectoration, but that there is no proof that it diminishes the number of tubercle bacilli contained therein, for in some of the patients, they apparently increased under its use. 4. That in many cases tuberculin injections are followed by a distinct extension of disease, as evidenced by physical signs. 5. That the reactions due to tuberculin are exhausting to the patient and cause loss of weight and strength. 6. That this treatment is specially contraindicated in lung tuberculosis accompanied by pyrexia, as likely to convert intermittent into continuous pyrexia. 7. That lung excavation accompanying the use of tuberculin may be followed by contractile changes, due to increase of fibrosis. This was shown in two of the cases under observation, where diminution of cough and expectoration and gain of weight took place. 8. That the tuberculin did not favourably influence the course of the disease in the majority of cases; that in some the effects were detrimental; and that even in the stationary and improved cases it was difficult to ascribe any distinct improvement to the injections which might not have been equally attained under the treatment ordinarily employed in the hospital.

The public have recently been led to believe that tuberculin in the form and doses at present administered is a remedy of great value in the treatment of this disease, and that those who are opposed to its general use are either actuated by prejudice or old-fashioned and unable to appreciate the recent advances of medical science. The provisions of the National Insurance Act relating to tuberculosis are now being, in part at least, carried out, and a system of so-called dispensaries is being established throughout the country, and at these and in sanatoria tuberculin treatment is being extensively employed by medical men, many of whom have had but little experience of its use and of the great dangers attending it. This appears to me to be such a grave situation that it is the duty of all who have had a prolonged hospital experience of consumption and its treatment to come forward and state their views.

In an interim report on tuberculin treatment recently presented to the consulting staff of the King Edward VII. Sanatorium at Midhurst by Dr. N. D. Bardswell, the medical superintendent, of which he has communicated an abstract to this Conference, there is a section dealing with the suggested use of tuberculin in dispensaries and in general practice throughout the country. In this section the history is given as regards tuberculin treatment of 10 patients prior to their application for admission to the sanatorium, and from these histories it is apparent that in the 23 years which have elapsed since 1890, when Koch first announced his discovery, tuberculin, although possibly it has in some cases become an agent for good, has lost none of its capacity for evil. All these cases, which have been seen during the past 12 months, will be subsequently published. Every single statement contained in the Brompton Hospital Report of 1891 of the ill-effects of tuberculin in cases attended with fever and in cases in which reactions occurred is exemplified in the history of these 10 cases, and their number could easily have been greatly increased. One of these cases had not been examined by the physician responsible for her treatment with tuberculin; she had never seen him; she had been "treated by post." The tuberculin and the syringe had been received through the post. She had had written instructions as to when she was to give herself an injection and what the dose should be. Her temperature charts were to be sent to the physician. It is to be hoped that this is not one of the modern advances in medicine which we old-fashioned people are expected to approve. I will endeavour in a few sentences to epitomise these cases.

CASE 1.—Male, adult. Tuberculin treatment continued for four months in spite of violent reactions. "When not in bed with fever, too exhausted to do anything." On admission very extensive disease.

CASE 2.—Male, adult. Tuberculin treatment for 14 months with "a fair number of reactions of moderate severity." "Steady loss of weight, amounting to 28 lb." Very extensive disease; markedly febrile on admission.

CASE 3.—Female, adult. Six weeks' sanatorium treatment, followed by arrest and convalescence. When afebrile and walking several miles daily, tuberculin treatment commenced. Followed by slight and severe reactions culminating in a febrile attack lasting eight weeks; on admission, extensive disease. After 14 weeks at Midhurst no appreciable improvement.

CASE 4.—Female, adult. Five months' sanatorium treatment without tuberculin followed by apparently complete recovery. During a relapse, tuberculin treatment commenced and continued for four months in spite of numerous severe reactions; active disease of lungs and larynx. No appreciable improvement after admission.

CASE 5.—Female, adult. Eighteen months' tuberculin treatment by post. Numerous severe reactions, ultimately followed by continuous fever. On admission, very extensive and active disease. Favourable progress after two months of complete rest.

CASE 6.—Female, adult. Chronic disease of four years' duration, with periods of complete arrest. Three courses of tuberculin, the last, accompanied by severe reactions, extending over a period of three months, during which she was very ill. No substantial improvement after admission.

CASE 7.—Female, adult. "After six months' treatment by rest, convalescence was in a considerable measure established." Then followed a course of tuberculin with severe reactions, ending in acute pleurisy with effusion. No improvement after admission.

CASE 8.—Female, adult. Onset in 1910. Recovery after spending a considerable part of 1911 in a sanatorium. Relapse after pregnancy and miscarriage. Tuberculin treatment began in 1912. Ten injections; last eight followed by severe reactions. Malaise, hæmoptysis, weakness, and faintness throughout treatment. Treatment discontinued after tenth inoculation on account of cardiac weakness and continued faintness. Temperature fell after admission.

CASE 9.—Female, adult. Onset in February, 1913. Tuberculin treatment commenced at once. No reaction to first five inoculations; sixth and all subsequent inoculations followed by severe reactions; pyrexia became continuous. "For last four weeks of treatment felt very ill and tired, lost weight, cough and sputum doubled in amount." On admission evidence of extensive and active disease.

CASE 10.—Female, adult. At Midhurst from August to November, 1912; discharged "with signs of arrested disease, in excellent general health, 10 lb. above average weight and walking six miles daily." A few weeks later began tuberculin treatment under the advice of a practitioner. From the first inoculation the temperature rose and very soon became definitely febrile. With the fever were associated constant malaise, shivering, nausea, and not infrequently vomiting. After the thirteenth inoculation the temperature for a week ranged between 101° and 103° F. Tuberculin was then discontinued, but for ten weeks the patient was confined to bed. Ultimately recovered after prolonged rest at the seaside.

I could supplement this experience with much of my own of a like character, but will restrict it to a single recent case, as it illustrates what is now taking place possibly all over the country.

CASE 11.—A man, aged 30 years, a foreman labourer, got wet through in November, 1911. Four days later he shivered. He remained at work, but developed "a cold upon the chest." Subsequently he noticed gradually increasing shortness of breath, especially elicited by playing a wind instrument. In February, 1912, he was found to have a pleural effusion on the left side; he was in bed for three months. In March, paracentesis of the left chest was performed and four pints of fluid removed. The operation was repeated in May, and six pints were removed. In September tubercle bacilli appeared in the sputum. In October he was admitted into a sanatorium. Tuberculin treatment was commenced a few days later, and injections were given weekly for three months; no reactions appear to have been produced.

This man was not aware that there was any question as to the value of this treatment, or that I had any opinion on the matter. I only discovered by chance towards the end of the interview that he had been submitted to tuberculin treatment. The following conversation then took place. He said, "I was the only one who could stand it." "How many others were treated?" "About 20." "Why was it

[1] A paper read before the Fifth Annual Conference of the National Association for the Prevention of Consumption and other Forms of Tuberculosis on August 4th, 1913.

omitted?" "In some it would bring on a small hæmorrhage. It made some feel very bad—bodily ill, headaches; they couldn't eat their food." "What was the effect upon their temperature?" "Used to send it up." "There were only about four of us who could stand it week after week, but I was the only one who stood it all through." He left the sanatorium on Jan. 9th, 1913, and had no tuberculin treatment up to June 14th, when a second course was commenced at a county tuberculosis dispensary, and is now in progress. His weight at the commencement of this course was 10 st. 12 lb. On July 6th it was 10 st. 8 lb. No reactions have been produced; he has had no appetite for seven weeks; states that he will be on the highest dose next week.

When I saw him on July 14th, 1913, the left pleura was so full of fluid that the heart's apex was in the right mammary line. There was evidence of tuberculous infiltration of the left upper lobe and of the right upper, middle, and lower lobes. This case is not cited to prove that this man has been injured by the treatment, as, although it has certainly done him no good, everything that has happened might have occurred if he had not been subjected to it. But I would ask you to think of this travesty of "sanatorium treatment" in which all that is being done for a patient in such a condition—"an ambulant case"—is an attempt to immunise him against tuberculin! This is, indeed, "fiddling whilst Rome is burning"!

The reports of the results obtained at the Frimley Sanatorium of the Brompton Hospital by the system of graduated labour introduced there by Dr. Marcus Paterson and those of the King Edward VII. Sanatorium at Midhurst during five years without the use of tuberculin are, in my opinion, absolutely trustworthy and unbiased. The same can be said of the interim report from the Midhurst Sanatorium on the results of the use of tuberculin, but it must not be forgotten that it deals with only 130 *selected* cases, whereas the results of sanatorium treatment at Midhurst without tuberculin are based upon the experience of 764 *unselected* cases. It is unnecessary to dwell on the fallacies attending any statement of percentage results when the numbers dealt with are small and the cases are selected. The figures, as Dr. Bardswell has already informed the Conference, show that whilst the use of tuberculin has had no appreciable effect upon the general results, there has been a difference as regards the cases discharged free from bacilli. This difference is stated as an increase of 5 per cent., a very small margin, which, with larger numbers, may increase or disappear; but it is sufficient to justify a continuance of the treatment, provided that every possible precaution is taken against harm being done.

The experience so far gained at King Edward VII. Sanatorium lends no support to the statements that the temperature in a febrile case can be reduced and the activity of the disease diminished or arrested by the use of tuberculin, or, indeed, that any obvious effect at all upon the patient's strength, weight, temperature, pulse, cough, expectoration, or appetite can be observed to follow its administration during a "reactionless course." I would invite you to contrast the careful scientific presentment of the case contained in the report from King Edward VII. Sanatorium just referred to with the many statements you have doubtless read, and I will venture to read a paragraph which I wrote in 1897 and published in 1898, which seems to have a bearing upon the present situation. The "announcement" refers to Koch's original paper: "The great interest excited throughout the world by this announcement is still fresh in our memories; the lamentable lack of judgment, of self-control, and of those critical faculties which should characterise the members of a scientific profession, displayed by many upon that occasion, may serve as a warning for the future."

Some of the conclusions at which I have arrived are as follows:

1. The use of tuberculin in any form in the treatment of pulmonary tuberculosis is not free from danger. Even with exceedingly small initial doses which are gradually increased the limit of tolerance may be suddenly reached and a reaction may occur.

2. Its use is absolutely inadmissible in any case in which there is fever.

3. Fever is, as I have always taught, the guide to the activity of the disease; therefore, the rôle of any remedial agent which can only be employed in afebrile cases is necessarily very limited.

4. General reactions should be avoided. If one occurs the treatment should at once cease. To continue tuberculin injections with increasing doses in spite of reactions is unjustifiable and dangerous to the life of the patient.

5. Focal reactions are also dangerous, as they cannot be controlled. They may occur in the neighbourhood of obsolete lesions, such as it is the object of all treatment to produce. I have reported a case in which, under treatment with old tuberculin, a patient expectorated four calcareous particles, one of which was surrounded by pigmented lung tissue, and also a small portion of lung tissue. Subsequently signs of excavation appeared at the apex of one lung. Calcareous particles are "sleeping dogs" which should not be disturbed.

6. The treatment likely to be attended by the best results should follow the lines of rest and exercise originated by Dr. Otto Walther at Nordrach, and further developed by Dr. Marcus Paterson at the Frimley Sanatorium of the Brompton Hospital.

Clarges-street, W.

THE PLACE OF TUBERCULIN IN TREATMENT IN RELATION TO OTHER METHODS.[1]

BY W. CHARLES WHITE, M.D.,
ASSOCIATE PROFESSOR OF MEDICINE, UNIVERSITY OF PITTSBURG.

TUBERCULIN has twice held the confidence of the medical profession in the treatment of tuberculosis, once stimulated by its discoverer, Robert Koch, and once by the researches of Sir Almroth Wright on opsonins, of von Pirquet and others on skin sensitiveness, and of many workers on anaphylaxis. Following each of these waves of enthusiasm there has been a relapse in confidence characterised by a good deal of scepticism on the part of those who have tried it. During the whole time, however, from its discovery to the present there have been those of great authority, like Trudeau in America and Philip in Edinburgh, who have never wavered in their belief in its value, in their persistent search for the truth underlying the method of administration, the choice of cases to which it shall be given, and the mode of operation of this poison in the animal body.

We are just now following the second wave of enthusiasm. This has washed to the shores of our knowledge some new truths concerning this vexed question. We are still, however, divided into two camps: those who believe—and among these are many who are best able to judge—and those who are filled with unbelief. There are so many factors entering into the problem of tuberculin administration, from the standpoint of the chemical composition of the patient and of the tubercle bacillus, and of the vital functions of both, as well as from the standpoint of the varying intelligence of our profession, to say nothing of the methods of the manufacturers who produce and exploit it, that it is small wonder that we have no universal law or opinion concerning it. I will try in this short address to outline in a general way what is known of tuberculin in its relation to the treatment of tuberculosis, to point out the flaws in our knowledge and methods of administration, to suggest the future necessities, and to give my own conviction as to its value and place.

Tuberculin has little influence on the non-tuberculous animal. It produces almost no protection against future infection with the tubercle bacillus, and acts only indifferently in the production of those phenomena known as anaphylactic which follow the introduction of a second dose of a foreign protein substance into the animal body. In the majority of tuberculous animals, however, tuberculin produces the changes which we know as "reaction." These changes, when pronounced, are characterised by sickness and fever, by inflammation at the point where the injection has been made, and also about the various tuberculous processes in the body. The dose of tuberculin to produce reaction cannot be given by mouth, but must be given directly into the tissue, and is best given by a hypodermic needle, either hypodermically or intradermally. If the reaction produced by the tuberculin is not too severe, it is often followed by an improvement in the patient's

[1] A paper read before the Fifth Annual Conference of the National Association for the Prevention of Consumption and other Forms of Tuberculosis on August 4th, 1913.

condition. The improvement is noticeable often only to the patient himself, but often is apparent to the physician as well. The dose of tuberculin may be, and in the majority of the ways of administration of this medicine usually is, too small to produce any reaction whatever.

The tubercle bacillus, like other living substances, is composed of three main types of organic substance—protein, fat, and carbohydrate. The carbohydrate has only lately been separated, and little is known of its character or its relation to the biological reaction. The protein element has been separated into three groups by Levene and the fat moiety into parts soluble in the different fat solvents, such as ether, alcohol, and benzol.

The skins of tuberculous patients differ very much in their sensitiveness or reaction power to tuberculin. They differ also in the intensity with which they react to the various partition elements of the fat and protein content of the tubercle bacillus. In a group of 50 patients tested for their reaction power to the various partition elements of the tubercle bacillus the number of reactions is about as follows:—

Whole substance	100 per cent.
Protein I. (Levene)	90 ,,
,, II. ,, ...	30 ,,
,, III. ,, ...	0 ,,
Fat (alcohol)	20 ,,
,, (ether)...	30 ,,
,, (benzol)	5 ,,

When the fat is mixed with the protein on the skin of the patient the resulting reaction is always greater than the reaction to any of the partition substances used alone.

If, now, one uses on the skin definite measured quantities of the tubercle bacillus in the form of tuberculin, one is able, on the basis of the intensity of the reaction, to get a fairly definite idea of the dose of tuberculin which should be given hypodermically to produce the same reaction in all individuals. This requires great precision of method, but it has been possible to produce in this way the same reaction in a series of over 700 cases, even though the dose of tuberculin necessary to do this has varied two hundred times between the most and the least sensitive cases. It cannot be said that this is the reaction of greatest good, but it is a reaction that I have never seen do any harm, but often great good. It furnishes, moreover, a basis for individual dosage in tuberculin therapy. While it is possible to do this for all cases which react to tuberculin, it is necessary to rule out as quite unsuitable for treatment cases doomed to death by the severity of their disease, cases with fever and cases complicated by some other diseases such as diabetes.

Upon anaphylactic phenomena, or auto-inoculation by exercise, a great deal of work has been done, but I do not think the results have at the present time much bearing on the use of tuberculin as a therapeutic agent by the general practitioner, and I mention them only to excuse the neglect of them in this address. Following the basis for dosage which has been outlined above, we next come to the question of tuberculin itself. If we accept tuberculin as meaning a solution of some part of the body substance of the tubercle bacillus, then we have a great many tuberculins under different names all owing their efficacy to the same content. Indeed, the last few years in many quarters has been devoted to furnishing new tuberculins such as fat-free, water-extracts, suspensions, emulsions, Dr. A's or B's, and so on. We have no standard tuberculin, and, further, we have no manufacturer who prepares the same strength of tuberculin twice. Consequently the dose of one tuberculin is no more the dose of another tuberculin than the dose of a sherry glass is the dose of a champagne glass. We have no method of testing the strength of a given tuberculin unless it is the biological one mentioned above, and this is tedious if it has to be used for every patient for every new supply of tuberculin.

It is possible that the urgent need for a standard tuberculin might be satisfied by determination of its nitrogen content by some standard method such as the Kjedahl method. If this were done and the nitrogen content printed on the label of each tuberculin bottle, it might help very much in arriving at a basis for individual dosage of this drug. If, however, the tuberculin standard is at fault, what a vastly greater difference exists in the physicians who administer it. There are almost as many methods of dosage and administration as there are administrators. Each physician believes his method the best. Some have no method at all. For instance, just before leaving home I saw a patient with advanced pulmonary tuberculosis, with high fever and severe throat involvement, who had purchased a manufacturer's tuberculin in a drug store and was taking it in progressive doses according to the directions on the bottle. This he was doing on the order of his physician. Nothing could well have been worse than the result in this case, which should not have been treated with tuberculin at all. And so I am afraid it will always be, and from this variation of the administrators we shall never have a standard method of such drugs as tuberculin.

You see our profession has not been used to methods of precision, and our patients have followed us. We have dealt with drops and teaspoonfuls, with tablespoonfuls and wineglassfuls, and many times the whole bottleful would have done little harm or good. We cannot use tuberculin in this way; the small part of a drop of some tuberculins may make the difference between too severe a reaction and just the right reaction. This is true with all modern therapy, and in our search for just the right dose for the individual we have had to adopt methods of greater precision. With the growth of the studies of physiological chemistry and pharmacology, and the inclusion of these in our pre-medical and medical courses with their exact methods, the future in this matter looks much brighter.

It is, after all, in this whole question the parable of the sower over again, but the fault is not with the ground but with the sower and the seed. The sower has no excuse but lack of knowledge or perhaps intelligence for sowing seed by the wayside, or on stony ground, or among thorns, and no sower to-day has much excuse for using any but a perfect seed of known purity and harvest potentiality. Such care is possible with tuberculin. We can choose our ground with some assurance of results, we can also choose our seed with some certainty, and many of us are yet able to learn methods of greater exactness.

When the dose of tuberculin has once been established for a given patient, this dose will give a definite grade of reaction in this patient, who reacts, as a rule, to the same dose in the same way, until his body ceases to be poisoned by the toxins which are developed by the tuberculous infection from which he is suffering. The loss of his reaction power is usually coincident with his recovery from his disease. From this time on larger doses have to be given to produce the same reaction. Finally, he loses completely his reaction power with his complete return to health. He may still have sputum with bacilli, but his lesions are probably so well walled off that they no longer poison his body-cells. It is better to use tuberculin in the hospital, with the patient under close observation, at least until his dose and reaction power have been determined. After this I see no reason why it should not be used in dispensary service with excellent results, although I must say that I do not think the results in the dispensary are as good as in the hospital.

My *confessio fidei* must now seem to you a lame affair. I can only say that I believe fully in tuberculin as an aid to treatment in tuberculous cases. Nay, more, I believe it is the only specific treatment we possess, and the most valuable aid to hygienic measures in our hands to-day. The doubters will ask me for my proof. Statistical studies are of little value on this question: we are so prone to bias in the choice of our cases, so apt to put down to tuberculin improvement due to other measures used at the same time, that very few are willing to accept them. I can only say that I, myself a subject of tuberculosis, have for seven years taken tuberculin in some form or dose at least every two weeks, probably in all over 500 doses. It has done me no harm that I am conscious of. On the other hand, I have been sure that it has done me great good when I have taken enough at one time to produce in my body a mild reaction. In small doses I have never been able to notice the slightest influence. I have now watched many cases who have taken tuberculin steadily for periods varying from two to five years—cases of tuberculosis of the eye, of bones, of glands, of skin, and throat—and I am sure again that the improvement in many of them was due to tuberculin and to tuberculin mainly. I must say, however, that the last dregs of the disease are always very hard to remove, and there is probably some other factor which we have not yet learned which must be added to tuberculin before we have a real specific for this disease.

THESES ON TUBERCULIN TREATMENT.[1]

BY PROFESSOR DR. SAHLI.

I SUBMIT the following propositions to the Congress on Tuberculosis:—

First: All the various tuberculins are essentially identical. The apparent differences are dependent on the various degrees of admixed impurities. The active principle of all tuberculins is the protein of the tubercle bacilli. There is no proof of the existence of a tubercle exotoxin. The fact that it is impossible to produce high sensibilisation for tuberculin by previous tuberculin injection in healthy animals is no argument against tuberculin being actually the toxin of tuberculosis. The best tuberculins are those prepared from cultures as free as possible from adventitious albumins.

Second: To avoid disastrous mistakes in therapeutic dosage it is advisable to provide the practitioner with tuberculin in suitably graduated dilutions as is done in the case of Beraneck's tuberculin. Not only the absolute dose, but also the concentration of the dilution is of importance. The same dose will prove more active in concentrated solution than when further diluted, because of the greater rapidity of absorption.

Third: The use of tuberculin for diagnostic purposes ought to be condemned. It is unreliable both positively and negatively. Diagnostic injections are dangerous. The only diagnostic procedure I advise is the cutaneous reaction with graduated dilutions. Its purpose is not diagnosis in the ordinary sense, but the determination of tuberculin sensibility in order to fix the proper initial dose for treatment.

Fourth: Tuberculin treatment is free from danger only if more obvious clinical reactions are avoided. In this case it is so harmless that it may be undertaken even when the diagnosis is not absolutely certain in order to effect prophylaxis in cases where infection is probable, although the disease is quiescent. Only such a mild method allows us to derive all the benefit possible from tuberculin treatment. Tuberculin treatment is chiefly valuable in incipient cases.

Fifth: In advanced cases tuberculin treatment may sometimes produce a certain symptomatic effect, but this effect does not compare with the utility of tuberculin in incipient cases.

Sixth: IN order that tuberculin treatment should be widely available for the most favourable incipient cases, it is indispensable that the general practitioner, and especially the family physician, should render himself proficient in tuberculin treatment.

Seventh: Correct tuberculin treatment is only possible if based on a solid and thorough knowledge of the action of tuberculin. I have laid special emphasis on this point in my monograph on the subject, the fourth edition of which I present to the Conference.

Eighth: The theory of the therapeutical action of tuberculin may now be regarded as well established. The therapeutical action is essentially of the same kind as the tuberculin reaction. Even so-called reactionless tuberculin treatment is based on reactive processes. The reaction of tuberculin consists in stimulation of the natural healing forces. The significant factor is the increased production of what I have called inflammatory antibodies and the specific tuberculin amboceptor. The latter has the effect of increasing both the local counteraction in the foci by the production of tuberculin-opyrin and the general detoxication of the preformed tuberculin. This detoxication depends upon the decomposition of the tuberculin by the amboceptor over the intermediate stage of tuberculin-opyrin into innocuous and inactive products. This detoxication is especially the cause of the antithermic effect of small doses of tuberculin.

Ninth: Tuberculin acts favourably only in cases where the human organism is not already sufficiently under the influence of absorbed tuberculin—that is, generally in slighter cases.

Tenth: It is not necessary to increase the doses of tuberculin to the furthest limit of tolerance. Many cases improved more with a much smaller dose, which I term the individual optimum dose. This optimum dose ought not to be overstepped.

Eleventh: The large doses of tuberculin recommended recently for the purpose of reducing temperature have no curative action. The reduction of the temperature depends in these cases only on an artificial production of an anti-anaphylactic state—that is, the same condition of things which causes the advanced cases not to react to tuberculin.

Twelfth: Tuberculin treatment has not the character of a true immunisation, though it produces immunisatory effects in the organism. In actual immunisation we try to produce as completely as possible a state (I wish to emphasise the word *state*) of immunity. This is impossible of attainment in tuberculosis. In tuberculin treatment we only look for stimulation and activation of the counteractions of the body at each injection. To try to express the mode of action I have called the therapeutical action of tuberculin an immunisatory healing action, in opposition to actual immunisation, which is a final state never obtained in tuberculosis.

Thirteenth: All localised tuberculosis is suitable for tuberculin treatment, provided that the patient's system is not already overloaded with tuberculin, and he is, therefore, too seriously ill. As a rule acute cases cannot be treated by tuberculin.

Fourteenth: Tuberculin treatment by means of multiple cuti-reactions after the method described by me at the International Congress on Tuberculosis in Rome, 1912, has been proved harmless, and useful especially for incipient cases. It is based on the principle of enlarging the reactive surface. The strongest local (cutaneous) reaction is produced with the smallest amount of tuberculin.

Fifteenth: Well-diluted tuberculin treatment constitutes a real and great therapeutical progress.

Berne.

[1] A paper read before the Fifth Annual Conference of the National Association for the Prevention of Consumption and other Forms of Tuberculosis on August 4th, 1913.

REMARKS ON THE TECHNIQUE OF ELECTROCARDIOGRAPHY FOR CLINICAL PURPOSES.

BY A. D. WALLER, M.D. ABERD., F.R.S.,

DIRECTOR OF THE PHYSIOLOGICAL LABORATORY AND MEMBER OF THE SENATE, UNIVERSITY OF LONDON.

I.—*The Electrodes. The Compensator and the Condenser.*

IN the Oliver-Sharpey lectures on the Electrical Action of the Human Heart as delivered and published,[1] I did not find time or space for any description of the technique of electrocardiography. But since then I have learned from various inquiries that have been addressed to me, as well as from trade catalogues containing approved directions for the pursuit of electrocardiography, that the simplified technique which I now follow is not generally known. It may be of service therefore to describe as briefly and untechnically as possible the simplified procedure that I consider to be best adapted to clinical use.

It has been assumed by recent clinical authorities on the technique of electrocardiography that it is necessary to use unpolarisable electrodes and a compensator in order to balance what are called "skin-currents" in circuit. I made use of these accessories 30 years ago in my first investigation of the subject, and they are in daily use in my laboratory for other purposes, but for taking electrocardiograms I have long since abandoned them.

At the Brussels Congress of Physiology in 1905 Professor Max Cremer showed that a condenser in the circuit gets rid of accidental fluctuations of current without interfering with the comparatively short alternating currents of the electrocardiogram. His subsequent publications,[2] and those of Zwicke[3] and of Gildemeister,[4] have fully confirmed the statement. Electrocardiograms taken (1) with unpolarisable electrodes and compensation; (2) with ordinary metal electrodes and a condenser of sufficient capacity (20 to 50 microfarads) are indistinguishable from each other; theoretically, according to Gildemeister, the error caused by the condenser to the first ventricular wave amounts to 1 in 2000—i.e., is negligible.

[1] THE LANCET, May 24th and 31st, 1913.
[2] Sitzungsberichte der Gesellschaft für Morphologie und Physiologie, München, 1905.
[3] Zeitschrift für Biologie, 1911, p. 32.
[4] Zeitschrift für Biologische Technik und Methodik, 1913.

I had found long ago that with platinum electrodes in salt water a galvanometer was not permanently deflected by accidental currents, such as "skin currents," or by compensating currents thrown in in the usual way. Their presence in the circuit acted precisely like that of a condenser, but I did not realise until Cremer's demonstration in 1905 of the effect of a condenser that as a matter of fact a platinum electrode in saline acts as a condenser of comparatively large polarisation capacity amounting, with the electrodes I used, to between 10 and 20 microfarads. At first I had used platinum wires, of "small" surface, of a capacity that I roughly estimated at 10 microfarads. Subsequently, and in conformity with the presumption that capacity might more probably be too small than too large, I used strips of platinum foil an inch broad, and dipping into salt water to a depth of about 2 inches, giving thus an effective surface of 4 square inches and a total capacity in circuit that I estimated at about 250 microfarads. Finally, I returned for routine use to platinum wire electrodes and a separate condenser in circuit of about 20 mF.

I chose platinum for the electrodes because it keeps clean, or is easily cleaned; gold has the same advantage, and I have found that it answers equally well; zinc plates are unsatisfactory, being apt to get oxidised when left in salt water and to give accidental currents. Other metals or alloys, such as silver or German silver, might, no doubt, be found to answer equally well, but I have been satisfied with platinum, and thus to be independent of shunting and compensation. Standardisation of deflections by a millivolt in circuit must, of course, be practised at frequent intervals to verify the instrument and to know the electromotive-force of an observed deflection.

II.—*The Galvanometer.*

A good many models of apparatus have passed through my hands during the last 25 years, from Lippmann's capillary electrometer to Einthoven's string galvanometer in various models, and the Bock-Thoma oscillograph; of course, any galvanometer when used in combination with a condenser of not too great capacity becomes substantially an electrometer. I have often been asked which is the best instrument for clinical purposes, and I do not find it easy to give a short answer. The Cambridge model is obviously good, if somewhat expensive. So are the various Edelmann models. In my laboratory one of them is set up for demonstration in the lecture room, and another very handy little model, with gold electrodes, as a travelling instrument; in this last form the instrument is suitable to the consulting-room table; no compensator or condenser nor any photographic accessories are necessary. The patient dips his or her fingers into a couple of finger glasses and the physician inspects the electrical pulse under the microscope. *A.-V.* dissociation and extra-systole, coupled beats, and disturbances of rhythm are plainly to be seen with this instrument by an accustomed eye.

The Bock-Thoma model—which by some clinical authorities is said to be "very bad"—is in my opinion excellent. The accessories are conveniently arranged, and it presents the advantage of permitting two or more records to be taken simultaneously, e.g., of the heart-sounds and the electrocardiogram (*vide* Fig. 1). It consists of four strings side by side in four magnetic gaps, each string acting as a separate galvanometer. The advantages of this are obvious. A spare galvanometer is always at hand. Double, treble, or at a pinch quadruple records of pulse, heart, and respiration can be obtained if one cares to take the trouble. The principal advantage of the Cambridge model is the fact that the fibre is hermetically enclosed in a removable fibre-case which protects it from dust and from draughts of air. In the Bock-Thoma the fibre is not completely enclosed.[5]

The essential quality of all such instruments consists in the sensitiveness of the fibre and the rapidity of its deflection. Comparing in this respect (1) the Cambridge model and (2) the Bock-Thoma, we have in the former a single silver-coated glass fibre, in the latter a loop of platinum with a minute glass mirror. The magnification in the former case is by means of an optical system, and amounts to × 500 or × 600; in the latter it is by virtue of the "optical lever," and amounts to × 1000 to × 4000. The mass of the moving part in the former case is smaller than in the latter; it is therefore easily made dead-beat, the difficulty being to make it quick enough. With the Bock-Thoma, by reason of the double fibre and mirror, the mass is greater, the movement is easily made quick, the difficulty being to make it dead-beat. It overshoots. And I may say that before I had had experience of the Bock-Thoma I was very suspicious as to the possible effect of this overshoot.

Fortunately, however, the time relations of the heart currents are such as to allow a considerable margin in the physical properties of these instruments as regards overshoot. The sharpest to-and-fro movement of the electrocardiogram, that of the systolic spike V_1, occupies a time of 0·04 to 0·05 sec.; in a case where I measured it as accurately as I could, the rise of V_1 took 0·03 sec., and the fall 0·015 sec.[6] Thus while the nearly instantaneous change of potential of 1 millivolt caused by an ordinary contact key can develop "overshoot," a change gradually developed in 0·03 sec. will not do so to any appreciable extent. Overshoots occur, indeed, at intermediate points in the rise of V_1, since the period of the oscillograph (1/80th sec. or 0·0125) is shorter than the time of rise of V_1 (about 0·03 sec.). But at ordinary speeds of the recording surface (about 1 inch per sec.) their effect is invisible and negligible. They become apparent only when the record is drawn out at higher speeds (3 to 5 inches per sec.) as slightly darker spots on the recording line marking the period of the oscillograph, and incidentally serving the useful purpose of an automatic chronograph. The "true" electromotive value of the spike is much more likely to be underestimated with the single string by reason of air damping than overestimated with the oscillograph by reason of overshoot. As a matter of fact the electrocardiogram taken by an oscillograph with, e.g., a period of 80 per second and an overshoot of 1 in 5, exhibits no appreciable overshoot, and is scarcely distinguishable from an electrocardiogram taken by a dead-beat string galvanometer of sufficient rapidity.

Photographic development is a subordinate matter that is usually left to the judgment of a laboratory assistant, who, however, like most photographers, brings out sharper records black on white than white on black. The string galvanometer gives across the photographic slit a thin vertical shadow in a bright field, which develops out as a "white" on "black." The oscillograph gives across the slit a vertical bar of light, which develops out as a "black" on "white." The records in both cases can be taken on a reel of paper or of gelatin film or on a glass plate. For an occasional record that is to be manifolded it is preferable to use a film or a plate from which contact prints can be taken. But for systematic recording purposes, when cases are to be taken by the hundred, and their records filed, it is far more expeditious and economical to take them on paper, and for this purpose the black-on-white records of the oscillograph are preferable to the white-on-black records of the string galvanometer. The former are clearer than the latter under equal conditions of light and development. The magnification is greater by the oscillograph than by the string, and the more distinct record of the former appears, therefore, more irregular than the finer and less distinct record of the latter instrument; but if the two records are brought to the same degree of distinctness and magnification there is not much to choose between them in this respect. The coarse tremor evident on

[5] I learn that in the latest models the enclosure is complete. I also learn that a careful comparison between the string-galvanometer and the Bock-Thoma apparatus was made two years ago by Grödel and Meyer-Lierheim. (Berliner Klinische Wochenschrift. 1911. No. 24.)

[6] At these time-values of the spike V_1, the record given by the oscillograph (with a semi-vibration period of 0·006) is slightly more accurate than that afforded by the single string (with a deflection-time of 0·02 for the millivolt-centimetre and a return-time to zero of 0·03 to 0·04 sec.). The two notches that sometimes precede and succeed the spike ("Q" and "S") are more pronounced with the quicker oscillograph than with the slower string. According to some clinical observers the depth of the notch "S" is an index of irritable heart, and I have heard it called "the neurasthenic notch." Without going so far as to deny altogether the nervous character of the "S" notch, I venture to invite attention to the fact that its absence or presence and its size can be determined by purely instrumental conditions. Slight alterations of tension such as are constantly occurring from alterations of temperature and moisture will as their first visible effect produce alterations in the depth of S and in the relative magnitudes of "P," "R" and "T." If the string happens to be slightly tighter and quicker than usual, "S" is favoured; if slightly looser and slower, "S" is disfavoured. With a string that is excessively loose and slow, T can be as big as, or bigger than, R, as with a capillary electrometer. It is futile to take elaborate measurements of the relative magnitudes of P, Q, R, S, T without checking the tension before and after each observation.

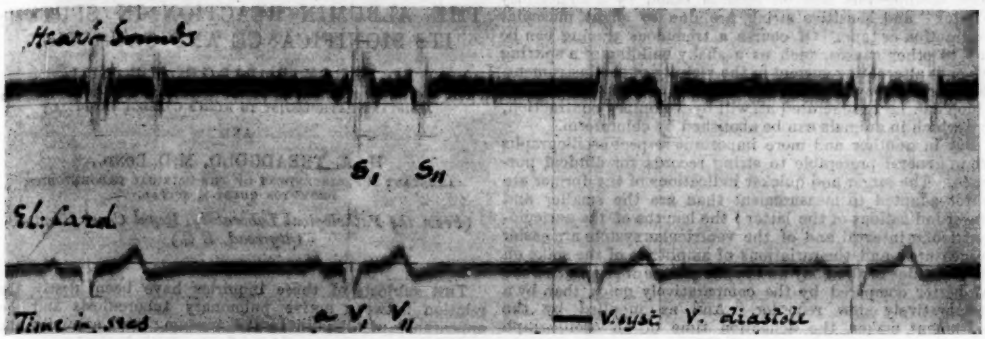


FIG. 1.—Bock-Thoma oscillograph. Simultaneous record of the heart sounds of T. H. K. (upper line) and of the electrical changes (lower line). S_I, S_{II} indicate the first and second sounds, V_I and V_{II} indicate the first and second ventricular waves, *a* is the auricular wave, and the length of the auriculo-ventricular interval is indicated below the third cycle by a horizontal bar. This subject, with an unusually slow pulse of 50 per minute, consulted a medical man for pain in the left shoulder, and was diagnosed as having serious heart disease with complete absence of the first sound. His anxiety was increased by frequent auscultation and percussion, but has been (for a time at any rate) allayed by the demonstration to him of his typically normal record. Duration of the *a*V interval, 0·17; duration of ventricular systole, 0·32; duration of ventricular diastole, 0·87; duration of cardiac cycle, 1·19; relation of systole to cycle, 27 per 100, or 6·5 hours per 24. Pulse-frequency = 50 per minute. The length of the *a*V interval is measured from the beginning of *a* to the beginning of V_I. The length of the ventricular systole is measured from the beginning of V_I to the end of V_{II}.

FIG. 2A.—Cambridge string galvanometer. (Read from left to right.)

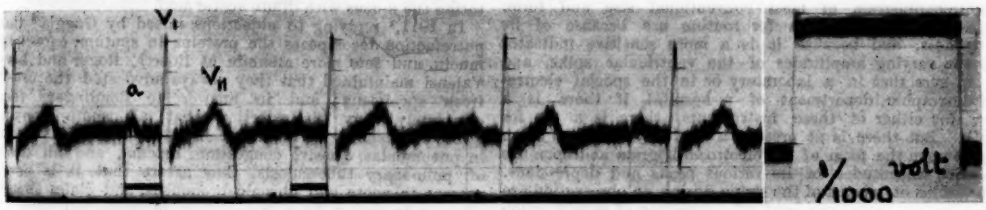


FIG. 2B.—Bock-Thoma oscillograph. A. D. W.—Transverse record. aV interval = 0·17 sec. Length of ventricular systole, 0·36; length of ventricular diastole, 0·44; cycle, 0·80; pulse frequency, 75. S/Cy = 45, or 10·8 hours per 24. The *a*V interval, taken from the beginning of the auricular to the beginning of the first ventricular wave, to measure the rapidity of transmission from auricle to ventricle, is indicated below the first two cycles by a horizontal bar. It measures in this case 0·16 to 0·18 sec. The square-topped deflection at the end of the record shows the deflection and overshoot by the instantaneous closure of 1 millivolt through the instrument.

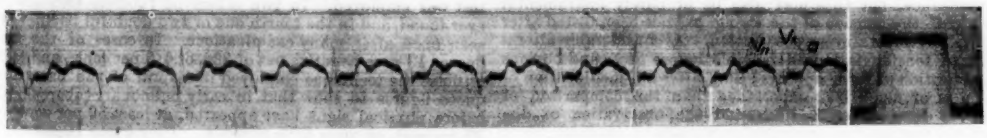


FIG. 3A.—Cambridge string galvanometer. (Read from left to right.)

FIG. 3B.—Bock-Thoma oscillograph. P. W. L. Right lateral record taken two or three minutes after running upstairs (1050 Kg M in 15 seconds). The pulse-frequency is 120 per minute. The aV interval is not abortened in proportion with the shortening of the cycle, but is absolutely longer than normal in this subject. Normally it was measured to be 0·17 sec. at a pulse-frequency of 70 to 80 per minute. In this record the interval, as indicated by horizontal bars below the first two cycles, comes out = 0·21 sec. at the pulse-frequency of 118 to 120 per minute.

most oscillograms and on records taken by a sufficiently "quick" and sensitive string are due to slight muscular contraction or tone. Of course a tremulous tracing can be due to other causes, such as a shaky building or a spitting arc or to alternating current in the vicinity of the instrument. But over and above these causes there is a true muscular tremor which can be exaggerated at will by voluntary contraction, and which in animals can be abolished by chloroform.

But in another and more important respect oscillographs are in general preferable to string records for clinical purposes. The larger and quicker indications of the former are better adapted to measurement than are the smaller and slower indications of the latter; the lengths of the auriculo-ventricular interval and of the ventricular systole are easier to measure; and the variations of amplitude of the spike on the two sides of the body and in the phases of respiration are far better compared by the comparatively quick than by a comparatively slow recorder. And as supplied by the instrument maker, the deflection time of an oscillograph mirror does not much exceed 0·005 sec. with an amplitude of 2 c.m. per millivolt, while that of an average string is at least 0·020 sec. for a deflection of 1 c.m. The greater height of the spike, as given by the oscillograph, even if due to "overshoot," could be of no disadvantage, since it would be a proportional augmentation of all deflections; but as a matter of fact the greater height of the spike in an ordinary oscillograph record as compared with an ordinary string record is a sign that the quicker instrument has followed the development of electromotive force during this phase more perfectly than was the case with the slower instrument. The smaller and slower indications of a string adjusted to give 1 c.m. deflection by one millivolt can of course be magnified for purposes of measurement, but to do this costs time and at best gives less satisfactory results than does the direct measurement of the corresponding oscillogram.

To return to the question—"What is the best instrument for clinical purposes?" or otherwise put "Which instrument is best to buy?—the Cambridge model or the Bock-Thoma?" I can only say that I like both instruments in a laboratory. I like the Cambridge model for cases where I want to get an electrocardiogram of most conventional size and form. I like the Bock-Thoma for routine use because of its quickness, and because it is a more sensitive indicator of the varying amplitudes of the ventricular spike, and I am sure that in a laboratory or in the special electrocardiographic department of a hospital, if there is a use for either of these instruments, there is a use for both. But there is at present a tendency to lay too much stress upon the form of the electrocardiogram and upon the relative magnitudes of its various peaks and depressions. Variations of tension of the string during an observation are of frequent occurrence, and the precaution of recording the standard deflection after as well as before taking a record should never be omitted if its form is to be studied. Variations of form, such as the presence or absence of Q, the augmentation of S giving the so-called "nervous notch" of some clinicians, the relative augmentation or diminution of T, are features that may possibly be of pathological significance, but that may also be of purely instrumental origin if the tension of the string has not been tested after as well as before every observation. A considerable alteration of tension is indeed possible before gross and obvious modification of form appears; and, after all, modification of form is of much less importance than the comparison of records from different leads and the observation of disordered rhythm.

Physiological Laboratory, University of London, S. Kensington.

MEDICAL TEMPERANCE COMMITTEE.—The final meeting of the committee which was responsible for the organisation of the lectures on alcohol which were delivered during the recent Brighton conference of the British Medical Association was held on July 31st, and much satisfaction was expressed at the success which crowned its labours. The lectures delivered by eminent members of the profession were, the committee states, of a high order and well attended, and it was felt that a considerable number of persons were reached who were not usually touched by the ordinary methods of the temperance propaganda. The committee decided to place on record its gratitude to the medical men who had rendered such splendid service gratis, and to hand over a balance of about £6 to the United Temperance Council.

THE ALBUMIN REACTION IN SPUTUM: ITS SIGNIFICANCE AND CAUSATION.

BY PERCY B. RIDGE, M.B. R.U.I.,
PATHOLOGIST TO THE ROYAL CHEST HOSPITAL, CITY-ROAD, E.C., AND ASSISTANT PATHOLOGIST TO KING'S COLLEGE HOSPITAL;

AND

H. A. TREADGOLD, M.D. LOND.,
ASSISTANT SUPERINTENDENT OF THE CLINICAL LABORATORIES, BROMPTON CHEST HOSPITAL.

(*From the Pathological Laboratory, Royal Chest Hospital, City-road, E.C.*)

THE subjects of these inquiries have been, firstly, the relation between active pulmonary tuberculosis and the appearance of albumin in the sputum; and secondly, the establishment, if possible, of the pathological condition associated with albuminous sputa. The presence of albumin in the sputum was described originally by Biermer[1] in 1855. In his investigation he mixed the sputum with water, filtered, and precipitated the albumin by heat after acidification. He claimed that the amount of albumin present was proportional to the cytological content, and was present in all sputa, in contradistinction to Renk, who at a later date claimed it absent in chronic bronchitis. Wanner in 1903 investigated the question more fully. His technique consisted in diluting the sputum with an equal volume of 3 per cent. acetic acid in order to precipitate all mucin, neutralising the excess of acid, adding sodium chloride to provide electrolytes for the coagulation of the albumin by heat, and finally weighing the precipitate after washing in hot water, alcohol, and ether. His conclusions were that albumin was present in practically all sputa. More recently Roger[2] and Levy Valensi[3] investigated the question of its presence in pulmonary tuberculosis under the title of the albumin reaction. Their technique was similar to that of Wanner, except that they mixed the sputum with an equal volume of water, afterwards precipitating the mucus with dilute acetic acid.

In 1911,[4] replying to objections raised by Goggia[5] that putrefaction decomposes the proteins in sputum, especially mucin, and sets more albumin at liberty, Roger and Levy Valensi maintained that they always advocated the use of fresh specimens; and in answer to Remlinger[6] they completely deny his assertion that all sputa contain traces of albumin. Whilst agreeing that albumin is present in pneumonias, passive congestion, œdema, and all cases of pulmonary tuberculosis, they assert that it is never present in acute and chronic bronchitis, and claim that if albumin is absent from the sputum in suspected cases of pulmonary tuberculosis after two examinations it is certain that the case is not tuberculous. They then proceed to analyse the few cases of pulmonary tuberculosis in the literature, which contained no albumin in the sputum. In cases of the second and third degrees there were 4 out of 897. In one case no sodium chloride was added when the coagulation test was employed. In two others no tubercle bacilli were ever found, and in the fourth one or two doubtful bacilli were seen once after many examinations. In cases of the first degree 13 were negative out of 288, or 4·5 per cent., and they criticise the technique employed in several of the cases and quote figures to show that in early pulmonary tuberculosis, before physical signs have appeared, at least 50 per cent. to 70 per cent. of cases have albumin. They quote Dieudonné[7] on the increased amount of albumin present in exacerbations produced by tuberculin and other causes. Of 19 cases considered as healed and examined by him 8 showed a few tubercle bacilli by antiformin only, and in these the albumin reaction was positive. In 7 tubercle bacilli had recently disappeared, and the albumin reaction was positive in all. In 4 others considered as cured for two years the albumin reaction was negative. Dieudonné claims that the test is of the utmost value in distinguishing between bronchitic and

[1] Biermer: Die Lehre vom Auswurf, Würzburg, 1855.
[2] Roger: Société Médicale des Hôpitaux, October, 1909.
[3] Roger and Levy Valensi: Ibid., 1909, vol. xxviii., Sér. 32, p. 3.
[4] Roger and Levy Valensi: La Presse Médicale, 1911, vol. xix., p. 409.
[5] Goggia: Gazzetta degli Ospedali, July, 1910.
[6] Remlinger: Société de Biologie, March 12th, 1911.
[7] Dieudonné: Revue Médicale de la Suisse Romande, 1910, vol. xxx., p. 394.

tuberculous sputa in these cases; and this opinion is upheld by Geeraerd,[8] who agrees that the disappearance of albumin in cases of pulmonary tuberculosis is pathognomonic of complete cure. Lesieur and Privey[9] dilute the sputum with four times its volume of normal saline, and test for the albumin, after acidification with 3 per cent. acetic acid, with strong nitric acid. Their results are as follows:—

Tubercle bacilli present	Albumin +	100 per cent.
Clinically tuberculosis, but no tubercle bacilli found	,, +	82 ,,
Non-tuberculous	,, +	37 ,,

Nathan Raw,[10] adopting the same technique in 110 cases, obtains lower percentages, but considers the test requires further investigation.

Spiers Fullerton[11] found that albumin was absent or inconsiderable in 50 per cent. of phthisical and in 86 per cent. of non-phthisical cases; it was considerable in 50 per cent. tuberculous and 14 per cent. non-tuberculous. Albumin was present in considerable amount in acute bronchitis, pneumonia, and bronchiectasis. He concludes that in consequence the test is only of limited valve, but that if much albumin is present in a case of bronchial catarrh not due to these causes, tuberculosis should be suspected. Fishberg and Felberbaum[12] describe cases of undoubted phthisis where albumin was absent, and point out that the amount bears no relation to the stage of the disease. They conclude by saying that the test will often shed some light on a case which may otherwise prove puzzling.

More recently Kauffmann[13] agrees that albumin is present in active pulmonary tuberculosis, pneumonias, congestion, and œdema of the lung and absent in chronic bronchitis, and considers that the presence of albumin in doubtful cases of pulmonary tuberculosis is strong evidence of active disease, whereas in healed cases albumin is absent. He finds that in lobar pneumonia albumin disappears after the crisis, and if remaining, suggests a new pneumonic focus or an empyema.

In considering this literature, which, all told, comprises under 2000 cases, it is evident that there is a general consensus of opinion that the albumin reaction is fairly constantly present in active pulmonary tuberculosis. But there seems to be considerable confusion as to its significance and its occurrence in other diseases. The results of the following investigation confirm the former claim and suggest a reasonable explanation of the latter.

The results are based on an analysis of 2164 specimens undertaken in two series. In the first, 2000 specimens were examined, the method being that of Lesieur and Privey. The findings, indicated in Table I., show that the vast majority

TABLE I.—*Analysis of 2000 cases.*

Tubercle bacilli present in 615 specimens.
,, ,, not found in 1385 ,,

Tuberculous specimens ...	Albumin + in 96·4 per cent. (Trace in 7·4 per cent.)	Albumin − in 3·6 per cent.
Non-tuberculous specimens	Albumin + in 32 per cent. (Trace only in 60 per cent.)	Albumin − in 68 per cent.

of tuberculous specimens (96·4 per cent.) contain albumin, and in approximately two-thirds of all other sputa which do not contain tubercle bacilli albumin is absent. This figure should in reality be higher owing to the fact that many of the cases in which tubercle bacilli were not found were diagnosed as undoubted clinical tubercle.

In the second series 164 specimens were examined. The sputum extract was obtained as in the first series, and the complete technique employed is as follows:—

The sputum, which should not be more than 12 hours old, is poured on to a Petri dish and examined on a dark surface. The purulent portions are selected and all clear mucin discarded, as the albumin is only present in the former. To one volume of sputum four volumes of saline (0·85 per cent.) are added, and the whole shaken up in a small Erlenmeyer flask filled with a rubber cork until homogeneous. This will not take longer than one or two minutes. From 3 to 10 drops of 3 per cent. acetic acid are now added until the contents of the flask are just acid to litmus paper. The emulsion is filtered through moist filter paper and the filtrate divided into three portions—(1) control, (2) for boiling, and (3) for nitric acid test. The nucleo-albumin, albumoses, and mucin are precipitated by the saline and acetic acid, only albumin and globulin appearing in the filtrate.

In testing for albumin the boiling test is more sensitive than nitric acid, for occasionally specimens give no ring with nitric acid, whereas a distinct cloud may appear on boiling. In this series the percentage of albumin-free specimens is therefore less than in the former, but a too strict comparison cannot be made, as many of the specimens in the first series were drawn from the chronic bronchitic class of out-patients, such specimens being free from albumin, whereas the vast majority of cases in the second series were supplied by in-patients and in the latter a lower percentage of albumin-free specimens would be expected, as chronic bronchitics are rarely admitted as in-patients. In this series the cytological content of the specimens was also investigated, the method of examination being that recommended by Besançon and de Jong.[14]

A thin film of sputum is spread with a platinum loop on a clean slide. It is fixed by dipping into 1 per cent. chromic acid for 2 seconds, washed in tap water for an equal time, and stained with undiluted polychrome methylene blue (Unna) for 2½ to 3 minutes. After quick differentiation with 90 per cent. alcohol, the specimen is washed, dried, and examined with a 1/12th oil immersion objective.

Films thus prepared lose a considerable amount of differentiation after 12 hours, and consequently should be examined immediately. One salient factor is demonstrated by this method of examination. In specimens containing albumin there is a relative increase in the number of alveolar cells, and this, with clinical evidence of consolidation that is usually present, has led us to the conclusion that the albumin is always associated with an alveolitis. The clinical aspect of all the cases has been fully investigated. Analysing these 164 cases they arrange themselves in three groups, indicated in Table II.: Group 1, cases containing tubercle

TABLE II.—*Analysis of 164 Cases.*

Group 1.

Tubercle bacilli + albumin + = 93 cases.

One case showing no albumin is included in this group; it was, however, only tested for albumin on one occasion.

Therefore, Tubercle bacilli + albumin + cases = 98·9 per cent.
Tubercle bacilli + albumin − cases = 1·1 ,,

Group 2.

Tubercle bacilli − albumin + = 39 cases.

Albumin in considerable quantity (12 cases).	5 of clinical tuberculosis. 1 of doubtful tuberculosis. 6 cases showing clinical evidence of consolidation, but definitely not tuberculous.
Albumin a trace (27 cases) ...	14 clinical tuberculosis. 13 cases showing evidence of consolidation, definitely non-tuberculous.

Group 3.

Tubercle bacilli − albumin − = 32 cases.

25 of bronchitis. 2 ,, bronchiectasis. 1 ,, laryngitis.	4 of clinical tuberculosis (3 very doubtful; 1 tuberculosis, but doubtful whether active disease present at time of examination).

bacilli and albumin; Group 2, cases containing albumin but no tubercle bacilli; and Group 3, cases containing neither tubercle bacilli nor albumin.

In Group 1, which comprises 93 specimens, four specimens on first examination failed to give the reaction; but subsequently three of these showed a trace on a second examination, and the fourth case was unfortunately lost sight of. Two of these cases were complicated by tuberculous laryngitis, and the very large amount of frothy sputum present was apparently laryngeal in origin. We suggest that this is a reasonable explanation of the occasional failure of the test in this condition. The two remaining cases were early ones, doing well, with a very small amount of sputum, consisting almost entirely of clear mucin. The very small amount of alveolar exudate present was evidently insufficient to give the albumin reaction. Here we would emphasise the great importance of following our technique with regard to the selection of the purulent portions of the sputum, which alone contain the albumin. The low percentage of cases of pulmonary tuberculosis in which albumin is present obtained by some authors may be due to

[8] Geeraerd: Tuberculosis, 1910, vol. ix., p. 372.
[9] Lesieur and Privey: Paris Médical, 1911, vol. xiv., p. 29.
[10] Nathan Raw: Brit. Med. Jour., Dec. 2nd, 1911.
[11] Spiers Fullerton: Glasgow Medico-Chirurgical Society, Jan. 19th, 1912.
[12] Fishberg and Felberbaum: Medical Record, 1911, vol. ii., p. 870.
[13] Kauffmann: Beiträge zur Klinik der Tuberculose, 1913, vol. xxvi., p. 269.
[14] Besançon and de Jong: Société Médicale des Hôpitaux, Nov. 27th, 1908.

their neglecting to observe this essential precaution. Roger and Valensi claim that albumin is absent in acute bronchitis, whereas other observers have claimed it to be frequently present. It is admittedly difficult to distinguish clinically between acute bronchitis and the earlier stages of broncho-pneumonia, and we suggest that this discrepancy is due to the presence of areas of consolidation in those cases which contained albumin.

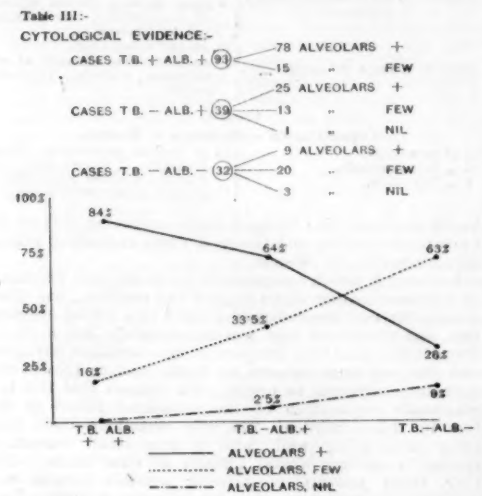
In this group 98·9 per cent. of specimens examined contained albumin, an improvement as compared with the first series, when the percentage of such cases was 96·4, due probably to the more sensitive test—viz., that of boiling the filtrate. Traces only of albumin were present in 21·5 per cent. of these cases, and these small quantities are found in specimens almost entirely consisting of mucin and with a very small amount of purulent material. Quantitative estimation of the albumin has been undertaken by Roger and Wourmann[15] and by Smolizanski.[16] Their results we consider as unconvincing, and we are unable to find any definite relation between the quantity of albumin present and the amount of lung involvement.

In Group 2 (T.B. – ; albumin +), which include 39 specimens, a large quantity of albumin was present in 12 and a trace in 27. In 20 a clinical diagnosis of active pulmonary tubercle was made, and in only one was it in doubt. The antiformin method for tubercle bacilli was undertaken in all the specimens of this group and the following one. In the 19 non-tuberculous cases the diagnosis was as follows :—

	Cases.		Cases.
Cardiac with pulmonary œdema	5	Chronic interstitial nephritis and pulmonary œdema ...	1
Bronchiectasis	6	Aneurysm	1
New growth of lung	1	Influenzal broncho-pneumonia	1
Lobar pneumonia	4		

The majority of these conditions do not present great difficulty in diagnosis on clinical grounds alone. The bronchiectatic cases are peculiar inasmuch as only a percentage of these contain albumin, two appearing in the next group of albumin-free specimens.

In Group 3 (no tubercle bacilli and no albumin) 32 cases have been examined and in 25 of these the diagnosis was chronic bronchitis. The remainder include 2 cases of bronchiectasis, 1 of simple laryngitis, and 4 of clinical tuberculosis, all very doubtful, and although they must be recorded as evidence against the conclusion both above and



to follow, the doubt as to the diagnosis raised on clinical grounds tends to militate against the importance of the evidence. With reference to the cases of bronchiectasis in Groups 2 and 3, the presence or absence of albumin depends on the amount of alveolitis existing round the cavity. In a case of long standing with a considerable degree of fibrosis this is practically negligible, and consequently albumin may be absent. This, however, is the exception, and traces at least were present in 80 per cent. of the cases examined. That albumin is constantly associated with an alveolitis is supported by the clinical signs of consolidation present in cases where the albumin reaction is positive, as well as cytological content of the specimens.

In the first group 84 per cent. contained alveolar cells in considerable numbers, 16 per cent. a few, and no specimen was free from these mononuclear cells. In the second group the cellular content changes, but not to any marked degree; and in the third group the specimens containing a considerable number of alveolar cells is reduced to 28 per cent. Table III. indicates the behaviour of these cells. Every specimen of sputum will show a few alveolar cells, their presence being usually demonstrable in the small quantity of morning sputum expectorated by the apparently healthy adult. These cells are, however, of quite a different type from the ordinary alveolar, and are of slight, if any, pathological significance. Apart from this there is definite evidence that the number of ordinary alveolar cells is greatly increased in albumin-containing specimens.

Conclusions.—1. Practically all cases of active pulmonary tuberculosis contain albumin in the sputum. 2. A negative examination for albumin on three successive occasions where tubercle bacilli are also absent, is strong evidence against active tuberculosis. 3. The presence of albumin in doubtful early cases of pulmonary tuberculosis helps to support this diagnosis. 4. The test is of considerable value in cases of chronic tuberculosis and emphysema as evidence of active disease.

[15] Wourmann: Thèse Paris, 1909.
[16] Smolizanski: Ibid., 1911.

BASOPHILE PATCHES IN THE PROTOPLASM OF THE NEUTROPHILE POLYMORPHS.

BY A. ROEMMELE, M.B., CH.B. GLASG.,
AND
ROBERT SWEET, M.B., CH.B. GLASG.,
LATE RESIDENT HOUSE PHYSICIANS IN THE GLASGOW ROYAL INFIRMARY.

THE characters of the neutrophile polymorphs we are about to describe were observed in the blood of a Brazilian sailor who was admitted to Dr. McKenzie Anderson's ward, Royal Infirmary, Glasgow, on Nov. 16th, 1910. The history of the case is as follows.

The patient, aged 21 years, was admitted on Nov. 16th. On the 15th he complained of headache and a chill; towards evening he became semicomatose. On admission he could be roused only with difficulty and was semiconscious. The pupils were contracted but reacted to light. The cardiac dulness extended 4¼ inches to the left of the middle line; the right border was at the mid-sternum. On auscultation a systolic murmur was distinct at the mitral area and conducted towards the axilla. Breathing was shallow and rapid but not laboured. Both lungs were resonant all over on percussion; on auscultation the respiratory murmur was harsh, but no râles were present. The temperature was 104° F., the pulse was 148, and the respirations were 60. The spleen was not enlarged. Urine was acid, specific gravity 1013. Haze of albumin. The patient recovered consciousness on the 19th, and was dismissed well about three weeks later.

With regard to his previous health, the patient on August 5th, 1910, was in the ward with a typical attack of acute rheumatism, from which he recovered, and was dismissed on Oct. 4th. While in the ward there was a systolic murmur at the apex, but on dismissal both sounds were pure. On examining the blood on admission on Nov. 16th there was a leucocytosis of 90,600, and we presume that this leucocytosis came on rapidly from the acute onset of the illness. The character of the leucocytes present gave the impression that the polymorphs were in a state of rapid development. Some marrow cells were present and also some dividing marrow cells were noticed in the film. In the neutrophile polymorphs a basophile patchy appearance was observed in the protoplasm of many of the cells, which appeared as though this were a stage in evolution of the development of the mature nucleus in the adult cell. On

examining films on the 16th to the 21st many of the cells showed these basophile patches when stained with Jenner and Giemsa stains. Some films stained with toluidin blue showed these patches very distinctly, the nucleus and these patches taking up the stain while the remainder of the protoplasm was practically unstained. In some cells four or five basophile patches were seen, in others only one or two. The

Sketch showing patches in different stages. (800 diameters.)

patches did not take any particular form, but some were peripherally placed, whereas others were attached to the nucleus by fine basophile tendrils. As the leucocytes became more like the normal polymorphs these patches became scarcer, and on the 22nd they could not be detected in the films. On the 19th many of the patches were attached to the nucleus, whereas on the 16th and 17th most of these patches were yet distinct from the nucleus and not attached by strands of basophile protoplasm. The sketches show the characters above described in all the different stages noted. The diagnosis of the illness was in doubt as no physical signs were present. The characters of the neutrophile polymorphs are interesting and possibly illustrate a stage of the cell.

Date.	Temperature.	Leucocytes.	Patches.
Nov. 16th	103·6° to 104°	90,600	Present.
,, 17th	101° ,, 103·8°	51,000	,,
,, 18th	102·6° ,, 104·4°	42,400	,,
,, 19th	98·4° ,, 101·2°	23,400	,,
,, 20th	98·4° ,, 99·8°	11,400	,,
,, 21st	98·2° ,, 99·8°	10,700	Absent.
,, 22nd	98·2° ,, 99·2°	11,600	,,

On the 16th numerous marrow cells and immature polymorphs were present in the films, whereas on the 22nd the marrow cells had practically disappeared and the polymorphs assumed the adult form.

INDUSTRIAL DISEASES AND COMPENSATION.—A Parliamentary White Paper has been issued containing the report of the Home Office Departmental Committee appointed to consider whether cowpox, Dupuytren's contraction, clonic spasm of the eyelids apart from nystagmus and writers' cramp can properly be added to the diseases enumerated in the Third Schedule of the Workmen's Compensation Act, 1906. The committee, which consisted of Mr. Ellis Griffith, M.P. (chairman), Sir T. C. Allbutt, Judge Ruegg, and Dr. T. M. Legge, recommended, among other things, that cowpox and Dupuytren's contraction should not be scheduled, the word "nystagmus" should be replaced by the words "miners' nystagmus," and the words "writers' cramp" should be added to the first column of the schedule, the second column being left blank.

SYPHILITIC INFECTION FOLLOWED BY LANDRY'S SYNDROME AND LATER BY TABES DORSALIS.

BY E. D. MACNAMARA, M.D. CANTAB., F.R.C.P. LOND.,
PHYSICIAN TO THE WEST END HOSPITAL FOR NERVOUS DISEASES.

IN a communication to the Société de Neurologie of Paris made on Jan. 9th last upon a case of acute ascending myelitis appearing during the course of secondary syphilis, M. Barth and M. André Léri cite a case published by me in 1906.[1] In that case symptoms of a flaccid palsy of the legs had shown themselves in July, 1904, and the palsy had in a few days ascended to the arms and to some muscles supplied by certain cranial nerves. Later the symptoms had passed away in the same order in which they had supervened, and six months later the patient was quite well except that he had some slight difficulty in going upstairs. At no time during his illness had there been any sensory disturbances, objective or subjective. The patient had contracted syphilis in 1898 and apparently had been thoroughly treated.

The subsequent history of the patient is interesting. I did not again see him until June, 1907, when he presented himself at the West End Hospital for Nervous Diseases. He told me that since the middle of 1905, the year after his illness, until March, 1907, he had occasionally had pains in the lumbo-sacral region. His legs, which had been left a little weak by the illness in 1904, had completely recovered by the beginning of 1907. The sphincters had been normal, but quite recently he had lost sexual power. He had, however, become a parent since his illness in 1904. The patient presented no abnormal physical signs except that of palsy of the sixth cranial nerve. He had, in fact, come to the hospital on account of a diplopia which had manifested itself one week previously. On Sept. 8th it was noted that the right pupil did not perfectly react to light. Towards the end of November, 1907, the paralysis of the sixth nerve had disappeared. He had been treated with potassium iodide and mercury.

The patient did not again come to the hospital until May 25th, 1911. Since the beginning of the year he had suffered from tired feelings and had had neuralgic pains. His gait was now ataxic and he showed Romberg's sign. The patellar and Achilles reflexes were absent. There was blunting of all forms of sensation of the legs as far up as the iliac crests. Both pupils were completely immobile. There was a very slight internal strabismus. Wassermann's reaction was reported to be negative. Since that time the symptoms have remained almost the same, but towards the end of 1912 there commenced to occur an occasional incontinence of urine. On March 13th, 1913, Wassermann's reaction was reported to be positive. The cerebro-spinal fluid contained lymphocytes to the extent of 8 per cubic millimetre. The albumin content was 0·05 per cent. by Aufrecht's method. The patient's condition improves with rest in bed and re-education by Fraenkel's exercises, but he quickly relapses.

We have, then, in this case a sequence of syphilitic infection, Landry's syndrome and tabes dorsalis. It might be suggested that the phenomena of tabes were the consequence of changes in the cord set going at the time of the clinical manifestations of Landry's syndrome; but the acute symptoms displayed by the patient in 1904 did not show any sensory abnormality, while the more chronic symptoms which have been gradually disclosing themselves during more recent years do not remotely suggest any degeneration of the anterior horns of the grey matter or of the peripheral nerves or their roots. One can hardly, then, suppose that the symptoms of tabes are a result of the myelitis, seeing that the myelitis was an anterior poliomyelitis, whereas the later symptoms are those correlated with degeneration of the posterior columns. We may therefore presume that the Landry's syndrome was either accidental and had nothing to do with the syphilitic infection, or that the syphilitic infection predisposed to it.

In the case reported by Barth and Léri the patient had had a chancre six months before the onset of the spinal

[1] Brit. Med. Jour., August 4th, 1906.

affection. Tetracocci and abundant lymphocytes were found in the cerebro-spinal fluid, and the post-mortem appearances were those of syphilitic meningo-myelitis. The reporters of the case conclude that the acute myelitis was of syphilitic origin, and think that the tetracocci might have acted as sensitising agents, rendering the patient peculiarly vulnerable. In the case under me syphilitic infection had occurred six years previously, and at the time of the onset of the ascending myelitis the patient was in good health, but nevertheless the subsequent occurrence of tabes suggests that the syphilitic virus had been present at the time of the Landry's syndrome and may be supposed, if it was present, to have taken a part in its causation either directly or by sensitising the patient's tissues to the tetracoccus or by acting upon tissues sensitised by the tetracoccus. The choice of these alternatives must for the present remain conjectural.

The case of my patient is, so far as I can ascertain, unique in the sequence of events it has presented.

Welbeck-street, W.

AN INVESTIGATION OF THE "CHRONIC IRRITATION" CAUSED BY FUMES AND DUST PRODUCED IN THE PROCESS OF MANUFACTURING TIN-PLATES.

BY H. C. ROSS, M.R.C.S. ENG., L.R.C.P. LOND.,

AND

J. W. CROPPER, M.SC., M.B., CH.B. LIVERP.

(From the Laboratories of the John Howard McFadden Researches, the Lister Institute of Preventive Medicine.)

RECENT researches into the causation of warts and ulceration which predispose to epithelioma in the patent fuel (briquette) industry have shown that these conditions are probably due to substances known as auxetics and kinetics. Auxetics are chemical agents which give rise to cell-proliferation, and kinetics are agents which excite amœboid movements. Both of them are found in some forms of coal, tar, and pitch; and, experimentally, there is reason to believe that together they are the cause of the pathological changes which predispose to malignant proliferation. This has led to a similar investigation being made in connexion with the tin-plate industry. In the process of tinning fumes are given off which have a powerful irritating effect on the mucous membrane, and it is with a view to finding out whether these fumes contain auxetics and kinetics that this research has been undertaken. At the pitch works the pathological lesions are confined to the eyes and skin, but in the tin-plate works the skin remains unaffected, and it is only in the naso-pharyngeal and alimentary passages that the irritation is felt.

For a full description of the tin-plate industry the Home Office Report,[1] by Dr. E. L. Collis, H.M. Medical Inspector of Factories, and Mr. J. Hilditch, H.M. Inspector of Factories, may be consulted; but we may briefly mention here some of the details described in that report which are material to this investigation. The industry is a large one employing several thousands of men and women, and it has been going on for about 300 years. Latterly some labour-saving devices have been introduced, but the general principles of the process are the same to-day as they have been for generations past. Tin-plates are thin iron or steel plates coated with a veneer of tin. The plates first undergo treatment to remove any trace of oxide, and are then placed in a water tank ready for the process of tinning. It is in the process of tinning in the "tin-pot" that irritating fumes are given off. The tin-pot consists of a cast-iron receptacle holding about three and a half tons of tin which is kept molten (at about 500° F.) by means of furnaces under it. Shallow partitions, which just dip into the molten metal, divide the surface of the tin into two main portions—the narrow flux box and the wider grease box. The flux box contains floating on the surface of the tin a layer of a solution of zinc chloride (which is now used as the flux instead of palm oil), and the grease box a thick layer of grease (which consists now, as it always did, of palm oil). Both the flux and the oil are in direct contact with the surface of the tin, and are therefore kept at practically the same temperature as the molten metal—i.e., 500° F. The plates are thrust into the tin through the zinc chloride, which helps to prevent oxidation as the two metals meet, until they are seized between rollers kept revolving in the mass of molten tin by machinery, and are thus passed on through the whole length of the tin-pot, whence they finally emerge through the thick layer of grease. They are at this stage found to be completely coated with tin, and are seized by workmen who drop them into the cleaning machines. Fumes are given off from both the palm oil and zinc chloride which are continually boiling (frizzling) on the surface of the tin. The zinc chloride is strongly acid; the palm oil when fresh is neutral, and gives off acrid fumes characteristic of burning fat. And from the fact that the zinc chloride frequently becomes mixed with the palm oil on the surface of the tin-pot, the men are usually subjected to the fumes from the mixture of the two. The cleaning machines are contrivances in which the tinned plates are rubbed over with "pink meal," a mineral spar consisting largely of lime and silica. The pink meal is sometimes mixed with sawdust or even soot to give the plates a polish; and, as the machines are not covered, the air in the tin house is so laden with dust that one can only with difficulty see the length of the building.

In considering the effects of this process of tinning on the mucous membranes, therefore, we have to investigate the three factors concerned—i.e., the fumes from the flux, the fumes from the grease, and the pink-meal dust. These factors must be considered separately and in conjunction with each other; for the pink-meal dust is saturated with the fumes.

The actual technique and the details of the experiments which have been made need not be described here; the former has already been published in connexion with the pitch inquiry,[2] and the latter will be printed in full on a future occasion. But watery and acid extracts of the flue dust, pink-meal dust, palm oil, and zinc chloride were made and tested by means of jelly films on individual human blood-cells. Observations were made for both auxetic and kinetic action. In samples of the flue dust, which is a mixture of all the factors in the process, both auxetic and kinetic were detected; in other samples one or other was present, and yet in a third number of samples neither was present. But even when both auxetic and kinetic were present their action was not so strong as that found in coal, tar, or pitch.

A second series of experiments was then made with a view to isolating the factor responsible for these chemical agents in the flue dust. But this was only partially successful; the pink-meal contained neither auxetic nor kinetic; sawdust (not clean) contained a slight trace of kinetic; the zinc chloride was too powerful a dehydrating agent to obtain any satisfactory test with; and the palm oil (fresh samples) contained active kinetic but not auxetic.

The question then arose as to the source of the auxetic, and after several negative experiments, such as burning the palm oil, an event which often happens at the works, mixtures of the several factors were made. It was on testing the mixture of zinc chloride and palm oil that the source of the auxetic in the flue dust was detected. The fumes from a mixture of equal volumes of the two substances, when collected in water and made up with "coefficient jelly" (0·5 c.c. to 10 c.c.), give a powerful auxetic action. The palm oil or grease, therefore, seems to be the source of the kinetic, and a mixture of the flux and grease the source of the auxetic. The actual chemical process which occurs in the production of the auxetic during this mixture is a matter for further research.

In the meantime it is necessary to consider what steps can be taken to alleviate the conditions at the tin-plate works and to prevent this mixture being made. With this object in view, we now publish this preliminary note containing the following suggestions and ideas. It is proposed to employ a substitute or substitutes for the palm oil, such as a mineral oil or wax (e.g., a petroleum fraction), or any suitable substance which is auxetic-free, and which when mixed

[1] Published by H.M. Stationery Office, 1912 (Cd. 6394). Price 10½d.

[2] The Problem of the Gasworks Pitch Industries and Cancer. London: John Murray. 1912. Price 6d.

under the industrial conditions with a flux is still auxetic-free. It is proposed that a suitable substitute be tried for the flux, or it may be found more practicable to treat the palm oil or flux, or both, by reagents in order to oxidise the auxetics or to fix them by the Sorenson reaction. Further, it may be advisable to separate the stages of the process of tinning by suitable covering of the various parts of the process or by isolating the workmen.

Owing to difficulties which have occurred in the past, the foregoing suggestions and practical measures are hereby published in accordance with the desire of Mr. J. H. McFadden, the patron of this Research Fund, already communicated to H.M. Government, that no improvement in any manufacturing process arising out of work done at this Research Foundation shall be exploited commercially.

A CASE OF VOLVULUS OF THE SMALL INTESTINE COMPLICATING GENERAL PERITONITIS; RECOVERY.

BY C. WILLETT CUNNINGTON, M.B., B.C. CANTAB.,
CLINICAL ASSISTANT (DISEASES OF WOMEN), GREAT NORTHERN CENTRAL HOSPITAL.

VOLVULUS of the small intestine is a rare surgical event, and recovery from it is still more so. Occurring in a patient who is already suffering from general peritonitis, the combination terminating successfully must be reckoned as something of a "curiosity."

The clinical history of the case is as follows. On April 17th the patient, a thin, somewhat delicate-looking woman, aged 28 years, was seized with symptoms of acute appendicitis. She gave a history of frequent previous attacks, all of a slight nature. The physical signs were localised; the general symptoms were not very severe. The leucocytosis was 32,000. The same day Mr. G. E. Gask removed the appendix, the tip of which was gangrenous and perforated. The region was wiped dry and a tube inserted in the usual way. The temperature and pulse fell, and for some days the patient's condition was satisfactory. On the 21st, however, slight abdominal distension was noticed. The next day this rapidly increased, the temperature rose to 101° F. and the leucocytosis to 42,000. The patient vomited several times. Accordingly, that evening the abdomen was opened again. The original wound was clean and well shut off by adhesions from the general peritoneal cavity. When the adhesions were broken down a secondary abscess was discovered and a large quantity of stinking pus was evacuated. A second opening was made above the pubes, and one drainage tube passed into Douglas's pouch and a second from the first to the second wound under the abdominal wall. The patient was returned to bed in Fowler's position, and continuous rectal salines were administered. Cultures of the pus showed bacillus coli and streptococcus brevis, and an autogenous double vaccine was prepared, the first dose being given the day following.

The patient's condition was grave, and was further imperilled by a smart secondary hæmorrhage from the fresh incision, producing temporary blanching and collapse. Both wounds became gangrenous and exceedingly offensive, and for some days the condition of general toxæmia was profound. Indeed, on the 25th she appeared to be sinking, being unable to retain any fluids by mouth or rectum. She rallied, however, the next day and began to emerge from the toxæmia, an improvement due in part, no doubt, to the effects of the vaccine, which was being given on alternate days in doses of 5,000,000 of each organism. By May 4th she seemed to be getting "round the corner." That night, however, she complained of colicky pain and she vomited. The symptoms increased and the vomit became fæculent. At first flatus was passed with the help of enemata, but by the afternoon (May 5th) it was evident that complete obstruction had occurred.

The abdomen was opened for the third time by Mr. Gask, in the middle line through the umbilicus. As the two former wounds were still suppurating freely, the difficulty of preventing fresh infection was considerable, inasmuch as the coils of small intestine, greatly distended, had to be lifted out of the abdominal cavity. Eventually a volvulus of the small intestine was made manifest. It appeared to have arisen round an adhesion deep in the pelvic cavity. A loop of small intestine was completely twisted upon itself and fixed by recent adhesions. These were gently separated and the loop cautiously untwisted. These manipulations produced a good deal of shock. The distended loop was rapidly sewn into the wound and a small puncture then made into it, from which escaped much gas and fluid. While recovering from the anæsthetic the patient vomited quantities of fæculent fluid. Two days later the fistula was discharging bile, suggesting that the opening was high up in the small intestine. All distension subsided and the bowels were opened daily by enemata, but the patient suffered much from the constant discharge from the fistula and the excoriation of the skin produced by it. On May 14th the edges of the puncture were drawn together by a suture, but as this cut out, on the 16th the abdomen was opened for the fourth time and the fistula closed in the usual way with a double row of Lembert sutures and the coil of intestine freed from the wound and dropped back into the abdominal cavity. The abdominal wound was then closed, leaving the skin layer gaping on account of its septic condition. The patient made a good recovery, and by June 15th was sufficiently convalescent to go for a drive. On June 17th she was again seized with symptoms of acute obstruction, and for the fifth time Mr. Gask opened the abdomen and found that the small intestine was obstructed by an adhesion, which was easily separated. From this date recovery was speedy and uninterrupted, and the patient is now in excellent health.

The case is, I think, remarkable for several reasons. The rarity of volvulus of the small intestine and recovery from it under such disadvantageous circumstances (for at the third operation the presence of generalised peritonitis was conspicuous to the eye); the singular fate of a patient to have to experience five abdominal sections in such a short time, and her strange good fortune to have survived these ordeals, unite to make a remarkable combination. The fortitude with which the patient bore her vicissitudes had much to do with the happy result.

My best thanks are due to Mr. Gask as surgeon and to Mr. W. Stanley Rooke as anæsthetist at each operation. I have also to thank Mr. E. C. Cunnington for kindly collecting from the records at St. Bartholomew's Hospital statistics of all cases of volvulus admitted to that institution in nine years, which I add for the sake of comparison. Sixteen cases: 4 of large intestine, 11 of small intestine, and 1 unidentified. Of those identified, 2 of the large intestine recovered and 1 of the small intestine. The remainder were fatal.

Finchley, N.

THE PREVALENCE OF CHRONIC GASTRIC DISEASE IN SPAIN:

NOTES ON MEDICAL AND SURGICAL TREATMENT.

BY W. A. MACKAY, M.D. EDIN., F.R.C.S. EDIN.,
AND
IAN MACDONALD, M.D. PARIS & EDIN.

IN Southern Spain the line between medicine and surgery is ill-defined. The beaten track of the specialist is still untraced; this record, therefore, of gastro-enterostomy has been made in a practice both medical and surgical. In the selection of cases for operation most types of dyspepsia have passed through our hands, and though in many cases of chronic gastric and duodenal ulcer the brilliant results of surgery are convincingly evident, in others we recognise the merits of careful medical treatment by daily enforcing it before advising operation.

Chronic disease of the stomach is very common here, and is most inefficiently treated; relapses are frequent. Patients suffering pain and vomiting are rarely ordered rest in bed, that essential of successful treatment. Frequently such patients come anticipating operation because organised treatment has been totally wanting. They find their symptoms disappear rapidly under rest and appropriate régime.

Ulcers in many cases begin most insidiously without history of acute attacks. In this country among all classes and both sexes, but more so among males, there is a great irregularity of meals. Much raw indigestible food is

consumed, such as raw vegetables, raw ham, highly spiced olives, and sausages. Among the poorer and middle classes vinegar is an unvarying constituent of the daily summer dish of "gazpacho" (bread, raw vegetables, water, and vinegar). Males of all classes frequently take raw spirits on an empty stomach, "to kill the morning," and in hot weather they drink large quantities of water between meals, also indulging in snacks of highly spiced sausages with undiluted white wine. Possibly such conditions of dietary produce hyperchlorhydria. Hygiene of the mouth is much neglected, and oral sepsis from carious teeth and pyorrhœa alveolaris is common, but, on the other hand, we have treated cases of ulcer in patients with perfect teeth.

Our observations have impressed us with the marked liability of certain families to gastric disease. W. S. Fenwick[1] has called attention to this fact. "Although," he says, "it has become the custom of recent years to ignore hereditary influences in the causation of gastric complaints, there can be no doubt that the clinical observations recorded by writers during the eighteenth and nineteenth centuries were correct, and that certain families possess a marked predisposition to gastric inflammation."

Syphilitic Lesions of the Stomach.

This apparent hereditary tendency to stomach disease has always inclined us to the belief that syphilis, hereditary or acquired, as a cause of gastric ulcer has never received enough recognition in practice.

In France, Fournier and Dieulafoy long ago insisted on its importance. Following these writers, Chiari, Galliard, Hemmeter, Einhorn, Hayem, Mathieu,[2] W. S. Fenwick, and others described the disease in the stomach. In the etiology of gastric ulcer syphilis must never be forgotten, for it may simulate ulcer or cancer with or without the presence of a tumour. The prognosis of syphilitic lesions in the stomach naturally varies much as to their extent, their age, and especially whether their nature is recognised early or late. Like specific disease elsewhere, their tendency is towards ulceration, with all its grave consequences, and to permanent deformation of the stomach from adhesions and scars. There comes a time when medical treatment is powerless to combat the lesions and only surgery can cure the consequent stenosis of the pylorus. For many years we have searched for a specific taint in cases of ulcer, and the results of treatment have not infrequently confirmed the diagnosis, cases which have obstinately resisted all varieties of drugs responding rapidly to antispecific remedies.

We are so convinced of the rôle of hidden syphilis in ulcer[3] that even in absence of its definite signs, when the usual remedies fail, we frequently prescribe antispecific remedies before advising intervention. It may thus be possible to avoid an unnecessary operation. The following cases from our practice may be quoted to illustrate the hereditary and acquired tendencies of this disease in the stomach:—

CASE 1.—A youth, aged 15 years, with pain and swelling of the ankle. Tuberculous disease had been suspected, and for this the patient was treated for some weeks. We then saw him, and recollecting that his mother had been treated successfully some time before for specific disease of the nose (the only manifestation she ever showed), the youth was put on blue pill and iodide. The joint recovered rapidly and completely. Ten years later he began to vomit blood and became steadily worse though dieted carefully and given the usual remedies. Recollecting his former illness, mercury and iodide were given for a short time with immediate good effect. The patient was lost sight of for three years, during which time he married. His wife aborted at the third month and he later developed general paralysis of the insane.

CASE 2.—A man, 24 years of age, completely collapsed from loss of blood and fear of further vomiting, was put on mercury and iodide of potash as a last resort, although there was no history obtainable of syphilis. Within 48 hours improvement was marked; the treatment was continued and the patient completely regained his health.

CASE 3.—A female, aged 56, was operated upon for old-standing pyloric stenosis. She had signs of acquired specific disease. Her daughter, aged 28, had suffered from severe gastric pains for several years. Mild antispecific treatment relieved her at once. The pain recurred slightly in subsequent years but always yielded at once to mercury with chalk. This daughter married and was delivered of a female child to all appearance healthy. Forty-eight hours after birth the child died from profuse hæmatemesis and melæna (duodenal ulcer in the newly born?).

CASE 4.—A male was operated upon for perforated pyloric ulcer. He had suffered severely from syphilis, and at the time of operation had late tertiary sores. Perforation occurred while the patient was in bed on a milk diet, preparatory to a gastro-enterostomy. He made a good recovery and had a gastro-enterostomy performed some months later. His brother also died from a perforated ulcer, and the father had succumbed to some complication of gastric ulcer.

CASE 5.—Two males in the same family were operated upon for pyloric stricture of many years' standing. Both of them showed specific scars.

CASE 6.—A male was operated upon for a large ulcer in the first part of the duodenum. His brother also had a gastro-enterostomy performed for pyloric ulcer. Both these patients showed clear specific scars.

CASE 7.—A male, aged 35, suffered from severe pain and vomiting for nine years; all varieties of treatment had failed to relieve him. The patient volunteered the information that he had lost his left eye from syphilis, and we found that he had typical specific scars on both legs. Antispecific treatment completely cured him in a month.

Cases Due to Malaria.

In his valuable monograph on dyspepsia W. S. Fenwick remarks that malaria is occasionally responsible for the development of gastric ulcer, that in certain malarial districts gastralgia is said to be exceptionally frequent, and that periodical attacks of hæmatemesis curable by quinine may accompany pernicious ague (Hemmeter). South Spain is notoriously malarial, and research work on malaria with cilnical experience extending over many years has made us very alive to the varied and often obscure symptoms of masked malaria. In our experience, apart from the fleeting depression of the digestive system caused by fever, we think that its influence in the production of ulcer must be rare. Notes of one case only in our practice illustrate the importance of not overlooking it. A male patient, aged 40 years, after an operation some years ago for suppurative appendicitis, began to suffer from persistent hyperchlorhydria of such severity as to warrant the diagnosis of duodenal ulcer. All treatment, including antispecific remedies, failed to relieve him, and the advisability of operation was discussed. We ascertained that he had suffered severely from malaria some years before the attack of appendicitis. All the other drugs were stopped, and the administration of quinine alone rapidly and apparently completely cured him.

The frequency of gastralgia due to malaria is difficult to ascertain with accuracy, though some of our *confrères* in fever districts cite cases cured by quinine. We believe that the majority of these cases which are referred to us after failure of treatment are more accurately classed as gall-stones, appendix dyspepsia, or ulcer. Periodical hæmatemesis in pernicious ague (Hemmeter) we have never seen, though in a case of hæmoptysis, recurring with unfailing regularity every three hours, removal of the patient on a stretcher from the fever area and large doses of quinine rapidly cured him. Therefore, we are ready to entertain the possibility of hæmatemesis in such cases, though we have never seen it occur with any periodicity in our extensive experience of malaria.

Cases of Reflex Origin.

In the diagnosis of the cause of severe and intractable dyspepsia one must ever be on the alert for its reflex origin. Here especially the local practitioner is apt to hand his long-suffering patient to the surgeon without sufficient examination. Thus we have had to separate from ulcer the common dyspepsias of nephritis and diabetes, the crisis of pain and vomiting due to movable kidney, and the profuse hæmorrhages whose origin lies in the cirrhotic liver. The rebellious indigestion of incipient phthisis has on more than one occasion been refused a gastro-enterostomy, and Banti's disease, with its attendant anæmia and dyspepsia, has been sent to us as a carcinoma of the stomach. In the diagnosis between organic disease and gastric neurasthenia, not infrequent here, we have proved the value of the clinical note of Bourget: "The patient with a well-defined lesion at the pylorus or on the lesser curve will show you precisely, often with one finger, and without pressure, the exact site of his pain. The further away from the pylorus the lesion, more diffuse is the pain, and less definite the gesture of the patient. The neurasthenic will pass his hands over the whole abdomen, pressing more or less deeply in his search for and to provoke an intermittent pain, which often to his astonishment he cannot elicit in its usual site, but which without fail he will find in ten other places."

Appendicular Cases.

The recent work of Moynihan, the Mayos, Paterson, and others has definitely proved the rôle of the diseased appendix as a cause of severe dyspepsia. The demonstration of the visible cicatrix in the stomach or duodenum before the performance of gastro-enterostomy and inspection or removal of the appendix are now canons in the surgery of gastric

[1] Dyspepsia, 1910.
[2] Traité Médico-Chirurgical des Maladies de l'Estomac et de l'Œsophage, 1913.
[3] THE LANCET, Dec. 24th, 1898, p. 1701.

diseases. The following cases, selected from several, illustrate to what an extraordinary degree the appendicular lesion can produce gastric pain and pyloro-spasm. In the first case a diagnosis of appendicular dyspepsia was somewhat confidently made. In the second the concentration of symptoms and signs in the stomach led to an erroneous diagnosis.

CASE 8.—A male, aged 32, had suffered from his stomach for 12 years. The illness began with pain after food at varying intervals, there was no vomiting, and his appetite had always been good. The gastric discomfort had been rather continuous; the intervals of wellness had been few and short. Milk diet had given him respite from pain for about a month at a time, though he never felt thoroughly well. The pain, which he described as in the stomach, tended to radiate down below the navel. We had seen the patient a year previously and had advised operation which at that time he refused. He now returned with all the symptoms aggravated, and vomiting had supervened, most frequently at night. Food alleviated the pain for a very short time, but it returned and persisted all day, forcing the patient to go to bed. Latterly it had become very much worse on exercise, and compelled him to give up his work, that of a miner. Though his symptoms had been almost continuous, he had noticed that they were aggravated in cold weather. On examining the patient the only painful spot in the abdomen was high up in the middle of the epigastrium. With this anamnesis the following preoperative notes are found in the case book:—"This patient shows no intervals of real health, and vomiting does not alleviate the pain completely. The pain shows a tendency to radiate to the lower part of the abdomen, and is worse on exercise during his work. The lesion causing his dyspepsia will probably be found in the appendix." At the operation, the stomach, both surfaces, the duodenum, and the gall-bladder were found perfectly sound. The appendix was found bent at an acute angle by a mass of adhesions, and it contained two hard fæcal concretions. Four days after operation the patient said he felt "as if a knot had been untied in his inside," and he has remained free from all gastric symptoms since the operation (four years).

CASE 9.—A male, aged 23, had suffered from his stomach for three years. Pain was severe and vomiting was present sometimes at once, sometimes one, two, or three hours after food and during the night. The nocturnal vomiting was profuse, a bitter liquid which at times almost filled a small basin. He had never vomited blood, but had passed blackish stools. During the illness there had been intervals with complete cessation of symptoms, and his appetite always had been enormous. The patient had the cold hand and slow pulse so often found in pyloric stenosis. On examination a painful spot was found exactly in the middle of the epigastrium, and a large peristaltic wave passing from left to right was clearly visible. A note was made at the time as to the height of this wave. It passed along almost wholly on the upper half of the epigastrium in close contact with the costal arches and the xiphisternum, showing no tendency to sink towards the navel or below it. A diagnosis of benign stenosis of the pylorus was made, and the abdomen opened through the right rectus. Inspection of the stomach, duodenum, and gall-bladder revealed no lesion. The appendix was found firmly fixed by adhesions and considerably thickened. It contained two hard stercoliths, one of which was a quarter of an inch long.

Severe reflex spasm of the pylorus may by produced by other lesions in the right iliac fossa, as the following case illustrates:—

CASE 10.—A girl, aged 22, with excellent family history, came complaining of epigastric pain and vomiting of seven years' duration. The pain came on before or after food, and was relieved by vomiting two or three hours after a meal or later, the last meal being sometimes vomited in the early morning hours. The vomited matter was always in large amount, much in excess of the food taken. The epigastric pain in the beginning of the illness had been severe; now it was less marked. The bowels were constipated, with alternating attacks of diarrhœa. The patient, sound in heart and lung, was much wasted, but her appetite was quite good. On examination the only painful spot was exactly in the middle of the epigastrium, where a faint peristaltic wave was visible. The case was sent to the clinic as one of pyloric stenosis, but though basinfuls of vomit long periods after food seemed to render such a diagnosis probable, Dr. A. G. Gray advised a revision of the diagnosis, as an ill-defined painless thickening could be felt in the right iliac fossa. On opening the abdomen peristaltic waves were at once visible on the stomach, the indication of Moynihan that the lesion will be found lower down. The stomach, pylorus, duodenum, and gall-bladder were normal; the cæcum showed a mass of tubercle posteriorly, running inwards towards the mesenteric glands. Six months later the patient was fat and well, with no gastric symptoms of any kind.

Medical Treatment: When to Operate.

In the medical treatment of ulcer after the routine care of the mouth we have found some cases of ulcer yield rapidly to Saundby's method, which briefly consists of enforced rest in bed while any pain or vomiting persists, milk diet gradually giving way to semi-solids and the use of the sulphates of magnesia and iron. Should these or other measures fail we often prescribe a short and mild course of antispecific treatment before advising operation, especially if pain is markedly nocturnal. If the ulcer still resists treatment or relapse takes place after some months, or if complications ensue we advise gastro-enterostomy. If the pyloric syndrome of Hartmann and Soupault is present—that is to say, late pain after food, persisting till vomiting relieves it like a charm—earlier recourse may be had to operation, for then the persistent spasm from an ulcer in this site plays the rôle of a cicatricial stricture, and relief from operation is immediate and lasting. But should this train of symptoms be wanting and stenosis absent, unless pain is very severe we prolong medical treatment.

We test the permeability of the pylorus by Roux and Bourget's meal, with prunes taken at night and removed by the tube 12 hours later. Though in some cases of pyloric stenosis the meal may pass out of the stomach in the night, if any degree of stricture is present the prune skins are always found in the lavage. Here, where treatment has long been neglected, the diagnosis is often only too evident, from huge peristaltic waves visible at a distance, with a history of vomiting of certain articles of food, such as beans, grapes, and olives, ingested many days before.

A most marked instance of food retention occurred in a case complicated by profound gastric tetany with complete loss of consciousness, where the patient vomited fruit stones which she had eaten months previously. Her case, apparently the twelfth successful operation for this fatal disease, was fully reported at the time.[4] Another patient, the subject of pyloric stenosis, thought well on the morning of operation to inform us that a month previously he had swallowed two bullets on the advice of a "wise woman," as a sure means of dilating his stricture. At the operation we missed them, as on pulling forward the stomach doubtless they sank towards the cardia. Fourteen days later the patient passed them to his great satisfaction; they each weighed over an ounce.

Duodenal Ulcer.

The proportion of duodenal ulcer is low in this record for several reasons. In our earlier cases we opened the abdomen in the middle line, turning the navel to the left, and thus we may have missed ulcers situated to the right of the pyloric vein. Further, it is probable that certain ulcers were classed as pyloric, though they lay on the right of the vein, and in many cases presented scars of such magnitude that the pylorus and first inch of duodenum were fused in cicatricial tissue. In our experience duodenal ulcer seldom comes to operation before the onset of some stenosis, though careful interrogation as to the early symptoms reveals the typical clinical picture of the disease.

Three cases of duodenal ulcer are mentioned because of the appalling hæmorrhage. One male was carried to his sierra station unable to walk from profound anæmia; from there he had a railway journey of five hours to the clinic. A female whose ulcer had oozed for years was felled by so profuse a bleeding that she was removed to her home as dead. Another male, after slight bleeding, fainted in the street. On being carried home he was attended by a local practitioner, who diagnosed his case as weakness from anæmia, and prescribed beef steaks next day. These patients were all operated upon and the bleeding duodenal ulcers have remained perfectly cured after the lapse of some years, though at that time the ulcers were not infolded.

In the diagnosis of ulcer it is well to remember that a single hæmorrhage in a patient who has not shown previous gastric symptoms is probably not due to ulcer (Mayo). The following case illustrates the importance of this observation of the American surgeon.

CASE 11.—A man, aged 51, had a severe bleeding from the bowel, and we were called to see him by an able local practitioner as a case of duodenal ulcer. There had been a profuse attack of melæna without any previous history of dyspepsia. Detailed examination of the patient, including the rectum, proved negative, and we suggested a continuance of rest and light diet, and that in the meantime it was unnecessary to intervene surgically. We lost sight of the patient for six months, when he returned to consult us for weakness and breathlessness. There had been no dyspeptic symptoms in the interval. The patient was thin and pale, his pulse ran at 120, was of high tension, and the urine showed a trace of albumin with casts. The melæna had heralded the hidden granular kidney which soon after caused his death.

Cases of Perforation.

The catastrophe of perforation is as frequent here as elsewhere, but we have only operated in three cases. The brilliant results obtained where the practitioner makes the immediate diagnosis are unattainable here, for an ancient symptomatology still reigns in the schools, and terminal complications are considered as signals of the accident. In the first of these three cases perforation took place in the clinic while the patient was awaiting a gastro-enterostomy. Steadily increasing pain had been present for two weeks before, and the accident occurred while the patient was in

[4] THE LANCET Nov. 18th, 1905, p. 1470.

bed on a milk diet. Castor oil had been administered five hours before. Prompt operation saved him. In the second case the patient was operated upon for a duodenal perforation 36 hours later, and he died. The third of these three patients, the subject of a subacute perforation, recovered after drainage of a huge abscess in the pelvis. We have seen a few other moribund cases, but usually this accident is undiagnosed, for as yet the "acute abdomen" has little place in the clinical teaching of the Andalusian medical schools.

Gastric Cancer.

Gastric cancer is frequent here. In some cases there is a clear history of ulcer extending over a period of years, but in others its clinical evidence has been so slight as not to call the patient's attention in any way to his stomach. As a palliative in cancer of the pylorus the operation has given us varied results, the shortest survival being three months, the longest two years. Increasing experience leads us to perform it less frequently in malignant disease. Like other surgeons we record three cases alive and well many years later, where the pyloric tumour thought to be cancer was evidently inflammatory from ulcer.

In the diagnosis of cancer, besides the chemical examination of the stomach contents, we have found the clinical history of great importance. Extreme prostration in a comparatively short time almost invariably indicates the serious disease, but not always, as the following case shows.

CASE 12.—A male, aged 52, was suddenly attacked in November, 1910, by gastric pain and vomiting. The vomiting passed but the pain persisted and became continuous night and day. In December he entered a hospital where he was put on milk diet and alkalies. In the hospital the vomiting returned at intervals, it was small in amount and was distinctly coffee coloured, and the pain as before more or less continuous. He remained in the hospital till the month of July, 1911—that is to say, eight months, when, as there was no improvement, he left and put himself on light diet instead of milk with slight improvement for a short time. The pain, however, returned as severe as before and became continuous night and day. Vomiting set in again and the patient rapidly began to lose weight. During the whole illness his appetite always had been fair. He consulted us in February, 1912—that is to say, 15 months after the onset of his illness. He was now so weak that he could hardly stand, was wasted to a skeleton, and looked like a cancer patient. He was vomiting small amounts of a thickish coffee-ground vomit which on applying tests for free hydrochloric acid gave a negative result. From the rapid onset of his illness and the extreme prostration our first impression was that the patient had malignant disease. But his appetite was fair, there was no repugnance for any article of diet, and his mental condition was curiously alert. He was put to bed and the stomach was washed out. The pain and blood gradually disappeared and repeated test breakfasts showed increasing quantities of hydrochloric acid, and on March 2nd a test meal showed retention of solids after 12 hours. On March 5th the abdomen was opened and a prolapsed dilated stomach was found. There was a tight stricture at the pylorus and another in the duodenum back under the liver, leaving a small dilation between these points. The appendix was pearly white with no adhesions and the gall-bladder also normal. Gastro-enterostomy was performed and the patient made an excellent recovery, rapidly putting on weight. He had evidently had a rapid stenosis, the coffee-ground vomit being caused by the erosions found in acute hypersecretion.

Technique.

We performed the anterior operation once, in our first case; the patient, after severe regurgitant vomiting for a week, made a good recovery. We then began the posterior operation, following Hartmann,[5] with clamps holding the tips of the stomach cone, but not the intestine, a method secure against hæmorrhage. Unlike him, however, we left a 12 to 18-inch loop which gave us three severe cases of vicious circle in the first 15. One patient died, the others were saved by entero-anastomosis on the fourth and thirteenth days. A paper by Ricard and Chevrier[6] in France called our attention to the vertical non-loop method which Moynihan developed in England. We performed several operations with vertical apposition of the intestine to the stomach over a large area, still, however, leaving a loop. This method gave satisfactory results, as, though a loop existed, the long vertical attachment of the bowel between the two curves of the stomach prevented regurgitation backwards of the stomach contents. We then gradually abolished the loop, continuing to place the bowel vertically against the stomach, and following Moynihan we began the use of clamps on both viscera. This is the method we now use with a modification. The viscera are united by the seromuscular suture, the cavities opened, and the first half of the perforating hæmostatic suture is carried along the posterior lips of the stomach till the corner is turned, when the catgut stitch is knotted and the needle laid aside. The clamps are then slowly but completely opened. Three or four small Kocher forceps are clipped on a corresponding number of vessels in the anterior lip of the stomach opening, and one or two on the bowel (though the bleeding from it is negligible) to adjust it later to the stomach lip for the anterior suture. The already sutured posterior line is now wiped and carefully inspected. It rarely reddens if the suture has been placed closely and tightly, but if the slightest ooze is seen a separate stitch is run under the bleeding point. The hæmostatic suture is now continued along the anterior lips of the stoma, the Kocher forceps being held up by the assistant, and removed one by one as the operator sutures from right to left, placing the stitch with extra care at the points from which the forceps are removed. We introduced this modification in the clamp operation as a safeguard against hæmorrhage; for several patients vomited a disquieting amount of blood soon after operation. Though almost certainly this was due to the suture being placed too widely apart, the recollection of the complete absence of post-operative bleeding in the operation without clamps by the placing of the Kocher forceps on the edges of the stoma (Hartmann) has led us to continue their use in the clamp operation. Hæmorrhage has evidently been a complication in the hands of other operators in the operation with clamps, and some have abandoned their use altogether. W. J. Mayo[7] uses a triple line of suture on the posterior line which he considers the area of danger. The use of clamps has considerably facilitated the operation in our hands, especially in cases with posterior adhesions, where sometimes it is difficult to grasp enough of the stomach wall, and since using them in the way described we have no anxiety about post-operative bleeding.

When possible we make a four-inch vertical attachment of the jejunum to the stomach, placing the two-inch stoma well among the vessels of the greater curve and excising the mucous membrane from both openings. After gastro-enterostomy we now infold ulcers as a routine method, and though lately we sometimes shut the pylorus, we are not altogether convinced of its necessity, as the majority of our patients have remained permanently well without this additional precaution.

We find, as a rule, that patients seldom vomit after the operation, and they suffer little pain if the viscera have been gently handled. Not infrequently they ask permission to smoke in the evening after the operation, and many of them sleep without any hypnotic. We have not yet used morphia after gastro-enterostomy. The anæsthetic used in this series of cases has been pure chloroform, administered in the earlier operations on a Schimmelbusch mask, latterly by the Vernon Harcourt inhaler.

Complications.

The immediate complications of the operation in our hands have been: (1) Vicious circle; (2) pneumonia; (3) hæmorrhage; and (4) parotitis.

1. *Vicious circle* (one death).—Three cases occurred in the first 15 operations; one patient died, and two were saved by entero-anastomosis on the fourth and thirteenth days respectively. This complication now, of course, never occurs.

2. *Pneumonia* (two deaths).—Pneumonia is best avoided by care in disinfection of the mouth for at least a week before the operation, by the minimum exposure of the viscera, and by the sitting posture as soon as the effect of the anæsthetic has passed. We believe that chilling of the viscera increases the liability to pneumonia or slighter catarrhal conditions which sometimes occur after the operation. We never use moist gauze in any abdominal operation because in this climate there is some peculiar condition of the atmosphere which produces very rapid chilling of such moist compresses. If, as is often the case, there is marked oral sepsis, we have found Hebra's soap solution of value in cleansing the mouth after the extraction of carious stumps, and as a routine disinfectant we use a solution of carbolic acid with the toothbrush. If before operation patients show any pulmonary catarrh we defer operating for a week or ten days and confine them strictly to bed. This complication caused two deaths in patients aged 60 and 64.

3. *Hæmorrhage* (two deaths).—As we have already stated, several patients vomited an alarming amount of blood immediately after the operation, and one case of cancer died 36

[5] Chirurgie Gastro-intestinale, 1901.
[6] Gazette des Hôpitaux, Jan. 24th, 1905.
[7] American Journal of Surgery, January, 1912.

hours later from hæmorrhage. The patient, a man aged 30, profoundly anæmic, with no free acid in the gastric juice, was found to have a carcinoma of the pylorus. Bleeding set in six hours after operation, and though during the night it seemed arrested, next morning it recurred with severity, and in the evening he died. A necropsy was refused, so it was impossible to ascertain whether the bleeding originated in the suture line or from the growth, but sharp though slighter bleeding in some benign cases led us to modify our technique as we have described. Another patient, a week after operation for pyloric growth, was suddenly attacked by profuse hæmorrhage and died sitting up in bed; till then his convalescence had been perfectly smooth.

4. *Parotitis.*—Acute suppuration of this gland occurred in one case and almost killed the patient. Free incisions repeated several times and wide drainage brought recovery after much sloughing of the gland. Disinfection of the mouth had been most carefully carried out for a week before operation.

Results.

Our cases may be classed as follows:—

1. Ulcers on lesser curve	10
2. Chronic pyloric ulcer without retention of stomach contents	24
3. Benign stenosis of pylorus with retention of test meal after 12 hours	87
4. Duodenal ulcer and stenosis of duodenum	40
5. Malignant stenosis of pylorus	13
Total	174

161 of the patients were males and 13 were females. The youngest patient was 22 (female), and the oldest 65 (male). There were five deaths. In 161 cases of ulcer or benign stenosis 3 deaths occurred, 1 from vicious circle, and 2 from pneumonia in patients over 60. In 13 cases of malignant stenosis there were 2 deaths, both from hæmorrhage—one 36 hours after operation, and the other a week later in an apparently normal convalescence. There were 72 consecutive cases without a death.

Additional operations without including removal of the appendix were performed at the same time in three cases, in two cholecystotomy for gall-stones, and in one removal of piles which coexisted with a duodenal ulcer.

Secondary operations were performed in three cases for pain or vomiting. In one the anterior surface of the stomach was adherent to the abdominal wall, and in another the transverse colon. In the latter case, one of our earliest, the stoma of a long loop operation, where the original opening was small and the mucous membrane not excised, was found contracted though still patent. The original anastomosis was separated, the loop shortened, and a large opening made between the viscera. The patient has complete relief from symptoms. In the third case, in which gastro-enterostomy had been performed two months after perforation, the patient continued to suffer. Two years later he was again operated upon. The new stoma was widely patent. The appendix, strictured and transformed into a cord, was buried in adhesions which terminated in a marked Lane's kink, fixing the ileum tightly at a most acute angle. Too short an interval has passed to record the ultimate result of this intervention, but the patient at present enjoys a freedom from symptoms unknown to him in the past two years.

We have endeavoured to obtain the remote results of the operation in benign cases by excluding all patients operated upon during the past 18 months; of the remainder we have traced 108 patients who have reported on their condition as follows: 81 are completely cured, 10 complain of flatulence and discomfort at times, and 17 suffer at intervals from pain and vomiting. On analysing these latter cases we find that in seven there may be an ascertainable cause for the symptoms. Three are among our earlier cases, have a long loop and an opening of insufficient size. Two had ulcers of the lesser curve only (females). One is a neurotic female, and one has developed albuminuria and the appendix is palpable. In the future such unsatisfactory results will doubtless be avoided by better technique and by not overlooking other lesions which evidently exist with ulcers. Two patients, more than one year after operation, had one severe attack of hæmatemesis or melæna. They both had large callous ulcers which were not infolded. Apart from these solitary bleedings they continue to enjoy good health, and are free from any gastric symptoms. Two patients one year later developed cancer on their ulcer, or the ulcer may have been malignant at the time of operation.

The coexistence of appendix disease and ulcers of the stomach and duodenum, whether in causal relationship or not, has been proved beyond doubt, so that careful inspection of the appendix or its routine removal has with some surgeons become a concomitant of gastro-enterostomy. In one of our patients with marked pyloric stenosis Dr. Gray found that palpation over the appendix caused severe nausea, almost vomiting. A large cicatrix was found in the pylorus and the appendix was grossly diseased. Had it been overlooked a recurrence of symptoms would have been attributed to an unsuccessful gastro-enterostomy. Since then we examine the appendix and not infrequently remove it for varying degrees of kinks and adhesions. In our last 25 operations we have found two cases showing a distinct ileal kink, a broad band of adhesions firmly fixing the terminal ileum.

It has been said that the only indication of gastro-enterostomy is cicatricial stenosis of the pylorus or duodenum. A retrospect of our cases leaves the impression that the operation in cases of pyloric or duodenal ulcers, with severe spasm before the onset of permanent dilatation of the stomach, gives results which are not surpassed even in stenosis. On the contrary, we believe there is a type of cicatricial stricture in which the remote results are not so brilliant as those of the active ulcer. These are old-standing cases where, though the stricture is tight, the stomach, with thin flabby walls, is hugely dilated, and the pylorus often is fixed to the gall-bladder and liver by pale lax adhesions. These cases, in our experience, are apt to have vomiting at times and a certain amount of discomfort after operation, possibly due to irreparable loss of tone of the stomach wall.

In after-treatment of our cases we insist on hygiene of the mouth, forbidding the use of raw vegetables, raw fruit, and alcohol for at least a year after operation. Such measures are sometimes claimed by physicians as a continuance of medical treatment after the surgical act. It is as illogical for the surgeon to deny the efficacy of such precautions as it is for the physician to put his trust in the dietetic and medicinal treatment of the old callous ulcer.

Whether the prevention of sepsis in the alimentary tract and pelvis will reduce the liability to gastro-duodenal ulceration the future alone can tell. All workers in this field await the dawn while pathology and surgery throw a clearer light on the etiology of ulcer, then preventive medicine may render operation rare, but till that day break and the shadows flee away surgery must ease the suffering of the dreadful night.

The surgeon of to-day more than the pioneers is dependent on loyal helpers. We are much indebted to our assistant, Dr. Gray, for valuable aid in differential diagnosis and at the operations in the past two years; to our dresser, J. Ramos, for the preparation of the cases and instruments; and to Miss Henderson, of Edinburgh Royal Infirmary, matron of our clinique during the last six years, for most constant watchfulness of the patients under her care.

Huelva and Seville, Spain.

MEDICAL SICKNESS AND ACCIDENT SOCIETY.—The usual monthly meeting of the executive committee of this society was held at 429, Strand, W.C., on July 18th, Mr. J. Brindley-James being in the chair. The claims showed a decided decrease and are now falling to their normal summer level. The past six months have been very heavy in this department, and the sum of £10,000 has been paid away. The satisfactory feature noted at this meeting was that the new business for June was double that for the same month of the preceding year, and the expansion of this department was well maintained during the following month. It was reported that the society's candidate for a foundation scholarship at Epsom College was again successful. The annual subscription of 100 guineas which the society gives is instrumental in procuring a large number of votes, and these are always given to the son or relative of a deceased member of the society. Since the annual subscription has been given all the society's candidates have so far been elected. This benefit is given, without extra charge, to members or their children, and has proved of great value. The subscription of 100 guineas to the Royal Medical Benevolent Fund has also been of assistance to the widows of members in obtaining grants of money when in financial distress. Application for information should be addressed to the secretary, Mr. Bertram Sutton, 33, Chancery-lane, W.C.

Clinical Notes:
MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A NEW SIGN IN KALA-AZAR.

BY R. A. P. HILL, M.D. CANTAB., D.P.H.

A FORM of "splenic anæmia" occurring in children and occasionally in young adults has long been known in Peking. The cases all come from the villages outside the city. It was first definitely proved to be kala-azar by Dr. W. H. Graham Aspland, who found leishmania in smears from a spleen puncture. Cancrum oris is a very common complication. Of 11 cases seen in two years of which I have notes only one was over 14 (that is by European reckoning 12 or 13). The exception was a girl about 20 years of age, who had been ill for a long time; unfortunately, there is no note of her residence. Besides these there have been three adult cases in my ward, but they were all from South China, recently arrived in Peking—two from Fukien and one from Honan. Adult kala-azar is well known in the south, though so far as I am aware it has not yet been reported from Fukien.

The diagnosis has been confirmed by spleen puncture several times since it was first made, but as a rule the organisms are hard to find. Neither have I been able, in three cases, to discover them in the glands, as is done by Dr. Samuel Cochran, of Huai Yuan. For this reason I think the sign here described is of considerable value as an aid to diagnosis. The diagnosis here is rarely at all difficult, as before the Revolution malaria was not indigenous and there was practically no other cause for splenomegaly in children.

The sign is this. For two years I have always used for leucocyte-counting a special diluent,[1] and have had uniformly good results with it, *except in these cases of kala-azar*. In these the red cells, instead of disappearing at once and entirely, run into great lumps which can only be broken up by long, vigorous shaking—in fact, it is usually impossible to make a count by this method at all. This has happened in every one of eight consecutive cases, including two adult cases from the south, in one of which spleen puncture was done and the organism found. It has never occurred in any other case of fever or splenomegaly I have met with here, including typhoid, typhus, relapsing fever, ankylostomiasis, pernicious anæmia, benign tertian malaria, and hepatic cirrhosis—several cases of each. Except in these cases I have met with it once only, and the diagnosis of kala-azar could not be excluded. The patient was a man whose blood I was asked to examine by one of my colleagues. He had fever, an enlarged spleen, a normal leucocyte count, except that the large mononuclears were 15 per cent., and a large ulcer on the side of his face, apparently beginning to involve the cornea. A drop of pus from this ulcer showed acid-fast bacilli in small numbers resembling B. lepræ, but the patient would not permit any further examination, being much incensed at the failure of "606" to do him any good. He had no other sign of leprosy, and the blood of a case of mixed leprosy reacted to the diluent in the usual way. He was not a Peking man.

From the limited material at our disposal here it will be impossible for a long time to decide whether this sign is of much value. We rarely see early cases, and cannot follow them up after leaving hospital. Nor do we get cases enough to be able to say whether it is invariably present, but this experience justifies one in saying that when present it is strong evidence in favour of a diagnosis of kala-azar. I record it in the hope that those who have facilities may be able to define the limits of its usefulness. I have found it very well marked in a patient who had noticed symptoms two months, but his spleen was very big.

It will be convenient to state the composition of the fluid used. A, Wright's modification of Leishman's stain, saturated and filtered, 2 parts; pure methyl alcohol, 1 part. (Keeps indefinitely if well corked.) B, 0·1 per cent. solution of pure sodium chloride in distilled water. For use add 1 part of A to 3 parts of B, shake well, and use within half an hour. If a precipitate forms or the cells overstain, add a little more methyl alcohol to A. Dilute the blood 1 in 20 or 25, and mix promptly. If the mixing is done too slowly lumps may form in any blood, but in kala-azar it is impossible with the utmost expedition to avoid lumping. The cause of it is not clear. It is not due to clotting, as it is found in hæmophilic cases with purpura and hæmaturia. Possibly it is an expression of increased proteid content of the blood. Against this is the fact that it did not occur in a case of lobar pneumonia, though the fibrin is increased in that disease. Of the eight cases it was least marked in one that apparently recovered under treatment with big doses of quinine, so possibly it may have a prognostic value too. In this case the red cells did not become invisible, though a little shaking broke up the lumps.

Union Medical College, Peking, China.

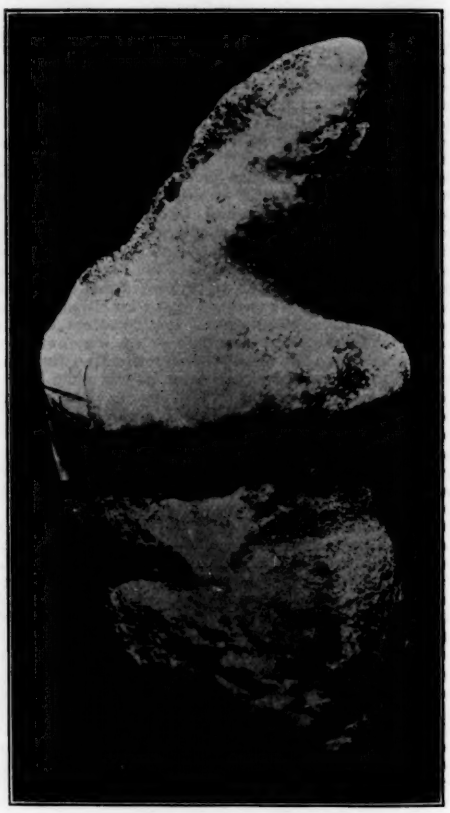
[1] Described in THE LANCET, Oct. 26th, 1912, p. 1179.

NOTE ON AN UNUSUAL VESICAL CALCULUS.

BY VERNON H. STARR, M.B., B.S. LOND.

THE following case of vesical calculus is, I think, interesting because of the size and shape of the stone. Larger stones have been recorded, but as far as I am able to ascertain from sources available here this is a large one for a young man.

The patient, aged 18 years, a Brahui, one of the nomadic tribes of shepherds in Scinde, came to the Church Missionary Society Hospital at Shikarpur, Scinde, on March 6th, 1913. He complained of pain and burning on micturition for



From a photograph of the calculus, natural size.

15 years, and said that hæmaturia was first noticed when he was 3 years old. In childhood he used to pass urine several times at night. He was a thin, pale, delicate looking youth. A sound could scarcely be passed into the

bladder, being obstructed by what was evidently a large stone.

An operation under chloroform was carried out on March 6th. Litholapaxy, the usual operation performed here, being out of the question owing to the size of the stone and the condition of the patient, lateral lithotomy was done as quickly as possible. The stone filled up almost the entire bladder. After considerable manipulation I grasped the stone, but it was only removed by Dr. H. T. Holland helping with his finger in the rectum and much forcible pulling. The urine was very foul. The prognosis was not good, but the patient did very well without any special nursing, the only wards being open sheds. He passed all urine per urethram by March 23rd, and the perineal wound was then healing rapidly.

The weight of the stone when completely dry was exactly 6 oz.; when fresh it weighed somewhat more. Its length was 4¼ in., breadth 2¼ in., and circumference 6½ in. From its shape the long-pointed portion must have occupied the urethra, the dilated ring the prostatic portion, the constriction marking the site of the constrictor vesicæ. It was only after turning it over and dislodging it that it was removable. The outer shell is rough and phosphatic. The stone has not been divided so that its exact composition has not been ascertained. The photograph (natural size) gives a good idea of the size and shape.

I am indebted to Dr. Holland for help at the operation and for the notes of the after-history of the case.

Peshawar.

ERRATA.—In the remarks by Professor R. J. Pye-Smith on Arsenic Cancer in our last issue, p. 283, col. 1, first reference (70) should be (*73*), and second reference (70) should be (*75*). Also in note 28, col. 2, for 3 read *63*.

Reviews and Notices of Books.

Traité Pratique de Pathologie Exotique, Clinique et Thérapeutique. Vol. VI.: *Maladies Parasitaires; Peste.* By Various Authors. Edited by Dr. CH. GRALL and Dr. A. CLARAC, of the French Colonial Army Medical Department. With 131 illustrations. Paris: J. B. Baillière et Fils. 1913. Pp. 652. Price, paper, 12 francs; bound, 13.50 francs.

THIS recently issued volume is the sixth of the promised eight which are to constitute a comprehensive treatise on exotic pathology, written by a number of authors, each of whom is a specialist in his own subject. We have already noticed in the columns of THE LANCET some of the previously published volumes as they appeared.

The sixth volume, now under consideration, comprises two distinct parts, the first of which deals with those diseases that are due to parasitic worms of various kinds, the second portion being devoted entirely to the subject of plague. Part I., with some 450 pages; is divided into three main sections, treating respectively of intestinal and visceral worms, the various forms of myiasis and jigger infection, and micro-filaria and filaria. Each parasite is minutely described, and in numerous instances the description is supplemented by illustrations. The symptoms caused by the different parasites are considered along with the diagnosis, treatment, and prophylaxis of each. Emphasis is very properly at the outset placed upon the necessity for microscopical examinations of the fæces in all cases of suspected helminthiasis. The authors who contribute to Part I. are Lecompte, Gaide, Mathis, Noc, Angier, Duvigneau, Clarac, Leboeuf, and Rigollett. In view of the common occurrence of parasitic worms in hot countries these articles should prove of great service to practitioners in the tropics. The information supplied is both full and up to date.

Part II. relates solely to plague and comprises about 200 pages divided into 12 chapters, in which are discussed the bacillus pestis, the clinical forms of the malady, the accidents and complications of the illness and during convalescence, the symptoms and post-mortem appearances, diagnosis, mortality, incubation period, prophylaxis, occurrence of the disease in animals, transmission of the infection, modes of propagation at long and at short distances, the present state of our knowledge of pneumonic plague, treatment, foci of infection in the past and at the present time, and the hypotheses advanced respecting the conservation of the virus. The whole of the article on plague has been written by Dr. P. L. Simond, a recognised authority on the subject, who, if we mistake not, was one of the first, if not actually the first, to put forward evidence incriminating the flea as the transmitting agent of the infection of bubonic plague from rat to man. Dr. Simond expresses his interesting opinions freely, but while we recognise fully their value we cannot in some instances entirely concur. We do not know, for example, how far the flea is concerned in the diffusion of pneumonic plague in its epidemic form, and the facts associated with the terrible and devastating Manchurian outbreak of 1910–11 do not afford sufficient support to Dr. Simond's suggestions. He admits, however, that in the past hypothesis has played too large a part in the history of plague, and he points out that the conservation of the virus, as well as other problems, still presents an open field for the investigator. Dr. Simond writes in a fresh and attractive style, and we recommend the careful study of his words.

Lehrbuch der Röntgenkunde. Zwei Bände. I. Band. Herausgegeben von Dr. med. HERMANN RIEDER und Dr. phil. JOSEF ROSENTHAL. Leipzig: Ambrosius Barth. 1913. Pp. 606. Price, paper, 25 marks; bound, 26 marks.

THIS is the first volume of a text-book whose aim is to give a comprehensive survey of the whole field of radiology. The work is a collaboration in which various parts of the subject are dealt with by different authors under the joint editorship of a medical expert and a physicist, and we may say at once that the expectations raised by such a powerful combination are not disappointed.

The present volume opens with a chapter on physics, while the succeeding chapters contain excellent practical directions for diagnosis and give careful descriptions of normal findings before passing on to morbid conditions, both being lavishly illustrated by well-executed sketches. Most of the authors insist on the never-to-be-forgotten rule that an examination by ordinary clinical methods must be completed before X rays are employed. Indispensable as they are, X rays are no substitute for thorough investigation by other means. It is certainly not the case, for instance, that all fractures are more easily diagnosed by radiography than otherwise, but this method gives valuable details, helps the differentiation of older from newer lesions, and guides in treatment. Under the heading of orthopædics Dr. Lange and Dr. Weber lay down the sensible rule that an examination should be made on the slightest suspicion of hip disease, comparing plates of both sides, but that, even in case of a negative result, treatment should depend on the clinical symptoms.

For various reasons the book contains few plates, but those illustrating the preliminary chapter on physics by Dr. Rosenthal are highly interesting and have been selected to show that radiographs are not, as sometimes stated, mere shadows or silhouettes. These pictures would not be taken by the uninitiated to be radiographs at all, but ordinary photographs, so perfect is the chiaroscuro. This so-called "natural plastic" is, of course, a plane picture whose light and shade give the effect of relief—a relief which appears

much lower than that of a stereoscopic view, and which is probably due to secondary radiation. It is seen at its best on the original plate (negative), while the print (positive) seems rather to suggest an inversion of the object—e.g., looking at a skull from within instead of from without (cf. Tafelbilder ix. and x.).

In his introduction to the section on the lungs and bronchi Professor Rieder discusses the important question of the nature of the hilum shadow and its branches into the lung, pointing out that normal glands throw no circumscribed shadow, though they may take a share in the formation of shadows where they are closely massed, as at the junctions of large bronchi. That the shadows are chiefly due to the vessels is shown by the fact that the dead subject exhibits a much fainter hilum pattern than the living, but that this is not their only cause is shown by plates taken instantaneously, which display two systems ramifying closely. One of these corresponds to the vessels; the other, with a double contour, to the bronchi; hence the shadow is composite even in the normal thorax. Unfortunately, no fast line can be drawn between normal and abnormal shadows, and the slighter deviations from the normal must leave room for variations of individual interpretation. The matter assumes great interest in connexion with the difficult question of the route of infection in tuberculosis, a question on which X rays may be expected to throw light, because they give a good general view of the whole "lung fields" and also display very early (though not the earliest) pathological changes. The radiological verdict, according to Rieder, is that the spread of tuberculous disease, whether in the child or in the adult, begins not as was formerly taught at the apex, but at the root, and that the direction taken follows the upper, less frequently the middle, and rarely the lower branches of the hilum tree. In this connexion it is interesting to observe that Rieder and others believe that pneumonia also begins centrally and travels outwards. Only rarely is a solitary tuberculous patch found in the apex or elsewhere, indicating an infection of the lung tissue direct from a bronchus; nor, as a rule, is a spread of disease from such an isolated focus observed similar to that which occurs from the hilum. On the other hand, Hamburger and others still hold that the primary lesion is always in the lung, and that from this the glands are secondarily infected.

Strictly speaking, glands are never primarily infected, and it seems to us at least feasible that primary infection may usually occur through the bronchial mucosa, leaving little or no lesion traceable even post mortem, still less during life, on a radiographic plate. The precise site of primary infection—bronchial, tonsillar, or other—will be determined by the pathologist, not by the radiologist, and the highly important observation by both English and foreign radiologists that tuberculosis is visible in the living as a glandular disease tending to spread peripherally, not as a lung disease spreading centrally, does not seem finally to dispose of the question.

Of the great value of radiography, or even of screening alone, in helping out our conception of the chest walls and their contents there can be no doubt, and this appears especially when signs are ill-defined or negative. The correlation of physical signs with X ray findings is a subject worth fuller investigation, and it is to be hoped that a wider use will be made in this country of this means of research. In Germany, we are told, all sanatoriums are provided with an installation. Special chapters are devoted to the pleura and mediastinum, and are followed by Professor Dietlen's lengthy and admirable account of the examination of the heart and vessels by the various methods from simple screening to orthodiagraphy, an elaborate method requiring special training to ensure accuracy, without which it has no value. The volume closes with chapters on the alimentary and urinary systems, which the limits of this review prevent us from discussing.

The work may be confidently recommended both to the beginner and as a work of reference to the expert. The second volume will complete the subject of diagnosis and deal with the biological and therapeutic effects of the rays, as well as the technique of their use. Where so much is good we may be allowed to complain that the subject of diagnosis is not completed in one volume, that the index is postponed to the second, and that there is not even a detailed table of contents.

L. Landois' Lehrbuch der Physiologie des Menschen, mit besonderer Berücksichtigung der Praktischen Medizin. Dreizehnte Auflage. Bearbeitet von Professor R. ROSEMANN. Zweiter Band. Mit 193 Abbildungen und 1 farbigen Tafel. Berlin and Vienna: Urban and Schwarzenberg. 1913. Pp. 465–964. Price, paper, 9 marks; bound, 10 marks.

IT is not often that the second and final part of a German text-book is issued so soon after the first part as is the case in the work before us. It deals in succession with the motor apparatus, the physiology of nerves and the central nervous system, the special senses, and reproduction and development, all of which are brought up to date.

The general physiology of muscle and nerve is set forth in a commendably proportionate space, having regard to the other matters of great practical interest dealt with in the text. The subjects of walking and allied matters, we are glad to see, obtain recognition. In many purely English text-books they are too apt to be omitted or lightly treated. For all practical purposes the elaborate description of Helmholtz's original method of measuring the velocity of a nerve impulse might be omitted. Under electro-physiology, although Einthoven's string galvanometer is mentioned, it would have been better understood by the introduction of an illustration of the apparatus itself and a typical record or two, in view of the importance recently assumed by electrocardiography. The account of the cerebral nerves is fuller than in most text-books, and is very comprehensive as well as of practical utility, for references are made to the pathology of these nerves. The average student is rather apt to attach too little significance to this interesting chapter in physiology. Under reflex action we should have liked to see a fuller account of the recent work of Sherrington on this subject. Several references are given in the literature, but we failed to find one to his Integration of the Nervous System. The structure of the cerebral cortex is dealt with very superficially, and no doubt this is intentional; still, a few figures to show how the histological structure varies with the localisation of function in the cortex would have been useful. Hypnotism and allied subjects are given a place. The important subject of the acquisition and mechanisms for speech, reading, and writing are explained. A figure showing the chief connexions of the cerebellum would help to facilitate the comprehension of the manifold and complex relations of this organ. In connexion with the cerebro-spinal fluid we failed to find any reference to the work of Leonard Hill and to the presence of trypanosomes in sleeping sickness.

About one-third of the whole volume is given to physiology of the special senses, and more than one-half of this is devoted to the eye. In the literature of the cornea the classical lectures of Ranvier on this subject do not seem to find a place. We think that the chapter on the static sense would be improved by the introduction of some illustrations from Ewald or other sources. Under smell there is no figure to illustrate the olfactometer. There is a short reference to Head's work on disturbances of cutaneous sensibility and

visceral affections, but we could not find in the index any reference to what he called epicritic sensation and his experiments on the effects of section of one of his own nerves. We have offered a few suggestions—they are not to be taken as criticisms—which if adopted in the next edition will prove useful.

The vast range covered, the terse, crisp statement of facts, the references to leading papers, more especially German, and the constant association of physiological facts to practical medicine, should make this text-book one of the leading practical text-books in physiology in any language.

De Oculorum Fabrica et Morbis. By PETRUS CAMPER. The original text with a German translation, by Dr. W. P. C. ZEEMAN, published amongst Opuscula selecta Neerlandicorum de Arte medica, by the Nederlandsch Tijdschrift voor Geneeskunde. Amsterdam: F. van Rossen. 1903. Pp. 411.

Petrus Camper (1722–1789) was a distinguished Dutch anatomist and physiologist. After taking his degrees as doctor of philosophy and doctor of medicine (with the dissertation *De quibusdam oculi partibus*) in 1746 he began to practise in his birthplace, Leyden, but soon left this town to become successively professor in Franeker (1749), Amsterdam (1755) and Groningen (1763), returning to his native place in 1773, where he subsequently became a member and president of the Staatsrath. His motto was "aut bene aut non."

The work, which is now printed for the first time, lay buried and unknown in the Amsterdam University Library until recently. Attention was drawn to it by a curious chance. A medical student, S. Diamant, now a practitioner in Herzogenbosch, picked up at an auction a manuscript of 336 pages entitled, "Petri Camperi de Oculorum Fabrica et Morbis." Examination showed that it was only an excerpt from the complete work under this title, which was found in the university library. Professor Straub, of Amsterdam, recognised the interest of the work, a description of which will be found in Hirschberg's "History of Ophthalmology" in the fourteenth volume of the "Graefe-Saemisch Handbuch der gesamten Augenheilkunde."

The book is divided into two parts, respectively on the anatomy and on the diseases of the eye. The former deals with the outer parts of the eye, the globe, its muscles and nerves, and the humours of the eye, the canal of Petit, and general remarks on vision. The second part describes the diseases of the eyebrows, lids, and eyelashes, of the inner canthus, the conjunctiva and cornea, of the inner parts of the eye, disturbances of vision, and remedies for ocular disorders. In his treatment of the subject Camper shows himself a careful observer and well ahead of his time. Had the work been published at an earlier date it could hardly have failed to become a popular text-book, with beneficial effect upon the progress of ophthalmology. The anatomical part makes free use of the works of his predecessors, Porterfield, Perrault, Haller, Le Cat, and others, but it also shows signs of original research, and contains interesting facts derived from comparative anatomy. His treatment of lacrymal affections is practically that of modern ophthalmologists before the recent introduction of extirpation of the lacrymal sac. His description of pterygium shows a distinct advance upon the views of his predecessors, who confused pterygium with pannus. Camper, like St. Yves, advocated puncture of the cornea in the treatment of hypopyon.

The book, which is excellently printed and contains an admirable portrait of the author, is a valuable contribution to the history of medicine.

LIBRARY TABLE

Notas Clinicas de Cirugia Ortopédica. ADOLFO LOPEZ DURÁN. Madrid: Valentin Tordesillas. 1913. Pp. 100.—Under this title Dr. Adolfo Lopez Duran publishes two interesting monographs dealing respectively with "The course to be followed by the surgeon in the treatment of tuberculous osteo-arthropathies" and with "The use of artificial tendons of silk in the treatment of the 'Ischæmic Contracture' of Volkmann." Dr. Durán, who is chief of the surgical service of the marine sanatorium for the treatment of tuberculous joint diseases in children, at Oza, in the province of Coruña, summarises in the first of the above monographs, which is illustrated by 57 skiagraphs, the results of his work at the institution named, and formulates certain conclusions as to the appropriate treatment of tuberculous osteo-arthropathies, which may be briefly stated as follows: 1. Tuberculins and antituberculous sera and vaccines have up to the present failed as specifics in the treatment of these conditions. 2. Chemiotherapy has already excellent results to its credit, and offers a wide and hopeful field of investigation. Iodoform used in the form proposed by von Mosetig is likely to prove a powerful auxiliary to surgical measures in the treatment of these diseases. 3. Sea air and the conditions prevailing at high altitudes are the only hygienic auxiliaries which modify general and local conditions in these patients or help in any marked degree towards a favourable result of other means of treatment. 4. Conservative mechanical or non-operative methods of treatment are of limited application. They are, however, the first that should be adopted in the earliest stages of disease, especially in childhood, but they should give way immediately to operative measures when skiagraphy reveals an advance or a stationary condition of the lesion. 5. Conservative operative methods employed at the right time and aided by von Mosetig's iodoform mixture give good results whatever the age of the patient; their employment, however, should not be tardy. 6. Radical surgical treatment (resection) should be the rule in the osteo-arthropathies of adults, the exception in those of children. With it should always be combined the use of von Mosetig's preparation. In the second paper Dr. Durán discusses the etiology and pathology of Volkmann's ischæmic contracture, and describes in detail the operative procedure he adopts for the cure of the condition by the division of the tendons of the contractured muscles and the insertion of artificial tendons of silk, after the method of Lange. The author points out that the great majority of cases of ischæmic contracture are in children and young adults who have suffered a fracture of the arm or forearm which has been treated by the application of a compressive apparatus. This latter he regards as the essential etiological factor. The symptoms of nerve involvement are, in his opinion, secondary and non-essential. The paper is illustrated by photographs showing clearly the typical claw-like contraction of the hand in these cases and by three from Lange showing, in microscopical preparations, the progressive infiltration of the silk "tendons" by connective tissue elements and the ultimate formation in the substance of the silk of true tendinous tissue.

Our Outsides and What They Betoken. A Summary. By W. T. FERNIE, M.D. Durh. Bristol: John Wright and Sons, Limited. 1913. Pp. 413. Price 4*s.* 6*d.*—A year ago we reviewed a little book by Dr. W. T. Fernie, which the preface described as a "last venture in print." Artists, however—and Dr. Fernie may be considered an artist in *causerie*—are proverbial for repeated farewells, so we were not surprised to receive for review another "farewell performance" by him. The present work is a sort of literary scrap-book of physiognomical lore, containing much of what is known, more of what is believed, and a great deal of what is merely suspected in regard thereto. The author's extensive reading, as well as his industry, is evidenced on every page, and there is a "table talk" character about these 400 odd pages of rambling comment which renders them entertaining reading. Temperaments,

heads, faces, eyes, ears, noses, mouths, hair, hands, fingers, voices, and so forth are discussed in the light of science and superstition, folklore and anecdote, poetry and philosophy, as well as of the literary and archæological evidences afforded by Egyptian, Greek, and Roman antiquity and palæolithic man. Much leisurely interest and some instruction (for the judicious reader) may be extracted from a perusal of this work. On p. 56 a paragraph of 14 lines or more is repeated verbatim, apparently by oversight, from p. 41.

JOURNALS.

The Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XLVI., Nos. 4 and 5. July, 1913. London: C. F. Clay, Cambridge University Press. Pp. 301–412. Price 7*s.*—The Response of the Respiratory Centre to CO_2, O, and Hydrogen Ion Concentration, by J. M. H. Campbell, C. G. Douglas, J. S. Haldane, and F. G. Hobson. The observations of Haldane and Priestley showed that the oxygen pressure in the human alveolar air can be varied widely without any immediate effect on the activity of the vascular centre, while extremely slight variations in the alveolar CO_2 pressure produce a very marked effect. In view of the publication of recent papers giving evidence to show that the respiratory centre in man is commonly less sensitive to CO_2 than Haldane and Priestley found, and that the excitability of the centre is governed by the existing pressure of oxygen in the alveolar air, the authors have made renewed observations on fresh subjects as to the effects of small rises in the alveolar CO_2 pressure. Elaborate tables and analyses are given. The authors find that: 1. A rise of about 0·22 per cent., or 1·6 mm., in the pressure of CO_2 in the alveolar passages increases by 100 per cent. the resting lung ventilation in man, and a corresponding diminution in the alveolar CO_2 causes apnœa. 2. The alveolar oxygen pressure can be varied within wide limits without sensibly affecting the excitability of the respiratory centre to CO_2. 3. Summation of the Hering-Brauer inhibitory vagus stimuli plays no part in producing apnœa in man. 4. Existing evidence points to the conclusion that the respiratory centre, when it responds to CO_2, responds to the balance of hydrogen ion concentration in the blood, and as an increase of even 2 mm. of CO_2 pressure corresponds to a scarcely measurable increase in the hydrogen ion concentration in the blood, it follows that the respiratory centre is extremely sensitive to changes in hydrogen ion concentration. Its excitability appears to be constant during health. 5. During rest the alveolar CO_2 pressure is very steady for each individual, which shows that the main regulation of the balance of hydrogen ion in the blood is exquisitely delicate, and is brought about elsewhere than in the lung—probably in the kidney for the most part.—The Influence of Nerve Stimulation on the Electrocardiogram, by Dorothy Dale and G. R. Mines. The authors used chiefly Rana temporaria. The influence of stimulation of the intracranial vagus and sympathetic were studied. The heart recorded its beats and was placed in connexion with a string galvanometer. The most important effects of the action of the vagus on the electrocardiogram are a lengthening of the *a.-v.* interval and a shortening of the duration of the electrical disturbance in the ventricle. Slowing of the heart itself tends to change these factors in the opposite sense. Hence the effects of vagus stimulation in any particular case depend on the amount of slowing produced. As to stimulation of the sympathetic, apart from changes in frequency, there is shortening of the *a.-v.* interval and increased duration of the electrical response of the ventricle. Increased rate of beat tends to alter these factors in the opposite sense; hence the effects depend on the amount of quickening produced.—Study of the Respiratory Mechanism in the Duck, by J. B. Orr and A. Watson. The authors investigated the effects of gases on the respiratory centre—e.g., CO_2 in variable proportions. Is the action of CO_2 direct or reflex, the authors ask, and what are the effects of privation of oxygen? The action of CO_2 in the inspired air is inhibitory, producing either slowing of the respiratory movements or complete apnœa, according to the percentage of CO_2 present. Lack of O in the inspired air produces a direct excitatory stimulus causing acceleration of the respiratory rhythm. The vagus contains excitatory fibres which are very readily stimulated.—On Dynamic Equilibrium in the Heart, by G. R. Mines. The author worked on the heart in the frog, tortoise, and electric ray. He proceeded from the proposition that of the conditions immediately affecting the response of the muscle those determined by its previous activity are of peculiar interest and importance. The beating heart is in a complex dynamic equilibrium. Almost any change in the chemical environment of the heart or stimulation of its nerves is apt to alter its rhythm. This paper will be read with interest, especially by professed physiologists. The author finds that the accuracy of the rhythm originating in the sinus venosus of various cold-blooded hearts isolated from nerve influence is very high. With a cycle of 2″ there may be variation of less than 1 per cent. in a series of 20 beats or more. With increasing frequency of stimulation each wave of excitation in the heart muscle is propagated more slowly, but lasts a shorter time at any one point in the muscle. The wave of contraction becomes slower and shorter, and the refractory period is shortened. By gradual acceleration of the rate of stimulation the ventricle can be caused to beat at a higher rate than if the rate of stimulation is abruptly raised. The author then refers to the nature of pulsus alternans, which he regards as dependent on local differences in the condition of the heart muscle—a view formerly expressed by Gaskell.—Wedensky Inhibition in Relation to the "All-or-None" Principle in Nerve, by E. D. Adrian. The author's conclusions, apart from the details of his experiments, are interesting, but this is a highly technical contribution.

Parasitology. Edited by GEORGE H. F. NUTTALL, F.R.S., and ARTHUR E. SHIPLEY, F.R.S., assisted by EDWARD HINDLE, Ph.D. Vol. VI., No. 2, July, 1913.—The opening article of this number, on Four New Species and Two New Varieties of the Ixodid Genus Hæmaphysalis, by Cecil Warburton, contains the description of new species and varieties of ticks, all of which with one exception have been received from India.—Notes on Ticks III., on Four New Species of Ixodes, by G. H. F. Nuttall, is also concerned with the description of new species of ticks.—Parthenogenesis in Ticks, by George H. F. Nuttall, contains an account of the discovery of parthenogenesis in Rhipicephalus bursa. Until recently no authentic case of parthenogenesis was known to occur amongst the Arachnida, but in 1912 Aragão discovered a species of tick, Amblyomma agamum, in which only the female is known, and reproduction seems to be entirely by parthenogenesis. In the case of R. bursa, however, males and females occur in approximately equal numbers, and therefore Professor Nuttall's discovery that the females, in the absence of males, may lay eggs which develop, is of great interest.—Helminthologists and others will welcome the article on Recent Progress in Our Knowledge of Parasitic Worms, by William Nicoll, a paper read at the British Association for the Advancement of Science. The author briefly reviews the main advances in our knowledge of parasitic worms that have taken place within the last five or six years. Within this period no less than 11 new species of worms parasitic in man have been discovered. Of this number four are flukes, four tapeworms, and three nematodes.—The Biology of some North American Ticks of the Genus Dermacentor, by F. C. Bishopp

and H. P. Wood, contains an account of the biology of three species of the genus Dermacentor—namely, hunteri, albipictus, and nigrolineatus. The latter two species are each of considerable importance as livestock pests, but none of them are known to attack man. D. hunteri moults off the host, but both albipictus and nigrolineatus remain on the host for both moults. Considering that one member of this genus, D. venustus, is responsible for the transmission of Rocky Mountain spotted fever, these notes on the life-histories of allied species are of additional interest.—Trematode Parasites from Food Fishes of the North Sea, by William Nicoll, contains an account of the trematode parasites found infesting the alimentary canal of certain fishes examined in Aberdeen. Two little-known forms, Stephanochasmus baccatus and the cercaria of Otodistomum cestoides, are described in detail.—Rhipicephalus Appendiculatus: Variation in Size and Structure Due to Nutrition, by George H. F. Nuttall, as its title implies, is devoted to an account of the variations due to nutrition in one of the commonest species of the genus Rhipicephalus. The ticks were fed either partially or to repletion as larvæ, and then either partially or to repletion as nymphs. In this way four groups were obtained, and those males and females that had been removed from the host before they had fed to repletion both as larva and nymph were found to be nearly one-thirtieth the size of normally developed adults. The effect of removing the partially gorged nymphs was not so marked as when the ticks were removed in the larval stage. The results suggest that one of the reasons of the great variability in the genus Rhipicephalus is the difference in the degree of engorgement attained by different individuals, as some are doubtless brushed off their host before being fully engorged.—The Variability of Rhipicephalus Pulchellus (Gerstäcker, 1873), together with its Geographical Distribution, by Norman Cunliffe, contains an account of the natural range of variation in another member of the genus Rhipicephalus. Although the range of variation is hardly as great as in the case of the artificially ill-nourished R. appendiculatus, nevertheless very considerable differences were found to exist between the largest and smallest adults.

The British Journal of Inebriety, the July number, contains a short article on Eugenics and Dysgenics in Relation to Alcohol, in which Dr. C. W. Saleeby directs attention to some recent work bearing on the influence of parental alcoholism on the stock. No attempt is made to summarise this work, but students of the question will be grateful for the furnishing of exact references to two original investigations which appear to be of importance—viz., the statistical inquiry of Mjoen, published in the supplementary volume of the Proceedings of the London Eugenics Congress ("Problems in Eugenics," Vol. II., pp. 172–182), and the experimental researches of Stockard on alcoholised guinea-pigs, recorded in the *Archives of Internal Medicine*, Vol. X., No. 4 (American Medical Association), pp. 369–398, and also in the *Archiv für Entwicklungsmechanik der Organismen*, Band XXXV., Heft 3.—In an article on the Definition of Intemperance from the Medico-sociological Standpoint, Dr. Alexander Walker argues in favour of the legal recognition of a stage of alcoholic intoxication preceding the ataxic phase to which at present the term drunkenness is ordinarily applied. He points out that it is in this earlier condition of psycho-motor excitation with failure of inhibitory power that there is the greatest liability to accidents and to criminal impulsiveness.—In an interesting account of the work of the Langho Reformatory for Female Inebriates, Mr. J. T. Clegg-Travis, chairman of the Lancashire Inebriates Acts Board, emphasies the fact that inebriety, or at all events what is recognised as such under the existing law, is really a phase of the general question of degeneracy. At Langho, for instance, a decided majority of the women sent to be "reformed" are found to be so defective in mind as to require permanent detention.—Other articles in this number deal with the organisation of counter-attractions to the public-house, and with the system recently introduced in New York for the care and treatment of inebriates.

THE

BRITISH MEDICAL ASSOCIATION.

EIGHTY-FIRST ANNUAL MEETING AT BRIGHTON.

THE SECTIONS.

BACTERIOLOGY AND PATHOLOGY.

WEDNESDAY, JULY 23RD.

President, Dr. JOHN W. H. EYRE (London).

The PRESIDENT having welcomed the members of the section, the business of the meeting was opened by Mr. RUPERT FARRANT (London), who read a paper on

The Experimental Production of Hyperthyroidism in Animals.

Opening with a *résumé* of the work of other observers, Mr. Farrant suggested that the contradictory results hitherto obtained were due to the methods of observation, the varying preparations used, and to the different methods of administration. In his own experiments 11 cats, 19 rabbits, 15 guinea-pigs, and 12 dormice had been fed with thyroid containing 0·3289 per cent. of iodine. Although thyroid feeding was invariably toxic, the resistance of the animals varied both as to the species and as to the individuals of the species. Exophthalmic goitre could not be reproduced in its entirety in these animals, but conditions could be induced resembling the disease in certain of its features. The chief features of the experimental disease were fur changes, bodily weakness, diarrhœa, tachycardia, and occasional glycosuria, combined with a disappearance of fat, muscular wasting, degeneration of the heart, liver, and kidney, enlargement of the islets of Langerhans, and hæmorrhagic changes in the intestine. He considered that the excess of secretion associated with the thyroid hyperplasia of exophthalmic goitre was the cause of the symptoms and morbid changes; but with regard to those symptoms that could not be reproduced in the lower animals—owing to the anatomical and other differences between animals and man—no such deduction could be justified. The absence of the morbid changes in the ductless glands and lymphoid system precluded their production by thyroid excess.

In the discussion which followed Dr. W. M. CROFTON (Dublin), Dr. J. A. BRAXTON HICKS (London), and the PPESIDENT took part, and Mr. FARRANT briefly replied.

A communication by Professor E. J. MCWEENEY, Dr. W. M. CROFTON, and Dr. H. F. MOORE (Dublin) on

Paratyphoid B Infections

was read by Dr. CROFTON. The authors related two cases of acute paratyphoid infection in which the infecting organism was isolated from the stools and very carefully studied with regard to their fermentation reactions and their behaviour in serological tests (carried out with (*a*) the patients' sera and (*b*) the sera from artificially immunised animals) in parallel series with a number of authenticated strains of members of the paratyphoid group, including the Aertryck bacillus. A point of considerable interest elicited by the authors was the rapid response of the infected individuals to treatment with autogenous vaccines, immediate improvement following the initial dose in each case.

The paper provoked a brisk discussion, in which Dr. J. M. BERNSTEIN (London), Dr. BRAXTON HICKS, Mr. C. W. HUTT (Brighton), and the PRESIDENT took part.

Dr. CROFTON replied to the criticisms and comments.

Professor v. WASIELEWSKI gave an exceedingly interesting demonstration on

The Structure and Cultivation of Amœbæ,

illustrated by microscopical preparations, lantern slides, and water-colour drawings. Some of his preparations (which had

been fixed by osmic acid vapour or alcoholic solution of corrosive sublimate and subsequently stained by Romanowsky's method) very clearly showed the differentiation of the resting nucleus into a central blue mass of protoplasm surrounded by a peripheral area of chromatin, whilst others showed equally clearly the positions occupied by these two structures during nuclear division. Among the many beautiful water-colour drawings that were exhibited were some of sections of the intestinal wall from the cat artificially infected with mucus from a human case of dysentery, showing the invasion of the tissues by the entamœba histolytica.

Dr. H. M. GALT (Brighton) read a paper on

The Value of the Blood Count in Obscure Bacterial Infections.

First drawing attention to the remarkable constancy within certain limits of all the histological elements of the normal blood, the speaker dwelt upon the equally remarkable susceptibility of the leucocytes to alteration in number and type under even slight influences, whether physiological, as seen in the seasonal and digestive fluctuations, or pathological, as seen in various infections. In febrile conditions generally an increase in the number of leucocytes was the rule; but the leucocytosis might be either simple, in which there was a proportionate increase in all the forms, or special, and then affected either polymorphonuclears, lymphocytes, or eosinophiles. Occasionally leucopenia, general or special, was observed. Again, alterations were to be observed in the number and hæmoglobin content of the erythrocytes, and the diagnostic importance of the colour index was insisted upon. In this connexion the term "homologous" anæmia was suggested to indicate a strictly proportionate reduction in both hæmoglobin and erythrocytes; on the other hand, there were a few pathological conditions, such as influenza, mumps, uncomplicated tuberculosis, and some cases of acute nephritis, which did not show an associated alteration in the blood count, and the speaker cited cases in support of his contention that in those few instances the inferences to be drawn from an unaltered count were equally valuable. Illustrative cases were freely referred to throughout, and in concluding Dr. Galt insisted that a blood count should be a routine practice in every case of indefinite febrile or bacterial infection, since any medical man would be able within a few minutes to obtain valuable information as to the various points already enumerated. The requisite technique could be readily acquired, the apparatus was neither costly nor cumbersome, and the reagents were easily prepared.

A brisk discussion by Dr. BERNSTEIN, Dr. CROFTON, Dr. BRAXTON HICKS, Dr. G. A. LEON (Torquay), and the PRESIDENT followed, from which it was apparent that all the speakers appreciated the importance of the "blood count" link in the diagnostic chain, and in many instances planned further investigations on lines directly suggested by the blood picture.

After Dr. GALT had replied, the section adjourned.

THURSDAY, JULY 24TH.

On Thursday morning the Sections of Bacteriology and of Therapeutics combined, under the presidency of Dr. EYRE, to discuss the subject of

Anaphylaxis.

Professor W. E. DIXON, F.R.S. (Cambridge), who opened the proceedings, reminded his audience that the earliest exact observations upon protein sensitisation were those of Richet in 1902 whilst investigating the action of congestin and thalassin—two poisons derived from the sea anemone—upon the dog. This observer found that three or four weeks after the injection of an apparently innocuous dose of one of these substances a condition of hypersusceptibility or supersensitiveness supervened, and a second similar dose frequently caused death. To this condition (the opposite of protection) he applied the term anaphylaxis. This reaction was soon recognised as general for all protein substances, but specific for the particular protein employed, the essential agent being the protein molecule. The first injection—termed the sensitising dose—might be as small as 0·00000005 grm.; this was followed after a definite interval, varying with different animals from one to three or four weeks, by a condition of supersensitiveness lasting for from some weeks in rabbits to some years in guinea-pigs, during which a second or exciting dose would give rise to the symptoms of anaphylactic shock, probably due to the presence of a hypothetical poison termed anaphylotoxin. The signs and symptoms of anaphylactic shock were then described under the headings of circulatory, muscular, and local; and reference was made to the fall in blood pressure following the paralysis and dilatation of the arterioles; the tonic contraction of the unstriped fibres of the bronchioles and consequent asphyxia; the tonic contraction of the uterus; and the localised itching and œdema of the skin. Professor Dixon then considered the theories that had been formulated to account for those phenomena. The first, based upon the side-chain theory, assumed that the sessile receptors which were the precursors of antibodies were the very structures that rendered the cells hypersensitive to the protein antigen; the second regarded the introduction of a foreign protein into the animal body as determining the formation of a new ferment capable of splitting up the antigen and setting free its poison molecule. The former theory was purely hypothetical; the latter was supported by a certain amount of experimental proof. Finally, since a toxic substance similar in its action to anaphylotoxin could be prepared by digesting normal guinea-pig serum with china clay, a third theory suggested that the poison was produced by physical means, and was due to the adsorptive properties of a colloid—a view that derived some support from the fact that the administration of indifferent hypnotics, the narcotic power of which ran parallel with their effect upon surface tension, prevented for a time anaphylactic shock. The clinical importance of anaphylaxis was touched upon, the speaker pointing out that a person might easily be rendered hypersensitive to a disease or that the injection of a therapeutic dose of, say, antidiphtheritic serum following the use of a similar serum prophylactically might result in serious anaphylactic shock. He suggested also that parturition might be the outcome of local anaphylaxis on the uterus, set up by placental proteins.

Professor SIMS WOODHEAD then dealt with the

Pathological Aspects of Anaphylaxis,

in which he criticised the value of anaphylactic experiments in the detection of blood and seminal stains, and expressed the opinion that they were inferior in delicacy and reliability to complement-fixation tests devised for similar purposes. He then brought forward a number of examples of pathological conditions which he regarded as due to anaphylaxis, such as puerperal eclampsia, in association with the tonic uterine contractions; the results of the escape of hydatid fluid into the peritoneal cavity or tissues during operative treatment; confluent variola, and even the symptom-complex of acute lobar pneumonia, which he argued might be the result of supersensibility to the mycoprotein of the pneumococcus, and referred in this connexion to the greater toxicity of the bacterial protoplasm of saprophytic organisms than that of more highly parasitic microbes. Professor Woodhead sounded a note of warning when referring to the increasing use of tuberculins and other vaccines and toxins therapeutically, and as an example pointed out that a tuberculous individual might already have received a sensitising dose from his own infective focus, in which case the dose of T.O. administered by the physician might become the exciting or reacting dose in the precipitation of anaphylactic shock. The speaker concluded by urging the use of antisera derived from the ox or the goat for prophylactic injections, particularly against diphtheria, in order to lessen the risk of anaphylaxis should the inoculated individuals subsequently need the administration of antisera therapeutically.

Mr. DENNIS EMBLETON (London) contributed a paper on

The Nature of Anaphylaxis,

in which he affirmed the identity of anaphylactic antibody and amboceptor, citing in support of his contention a series of experiments in which guinea-pigs were passively sensitised by the intravenous injection of sufficient serum from a rabbit immunised to sheep's blood corpuscles—1680 or more units. The intravenous injection 24 hours later of washed sheep's corpuscles resulted in acute anaphylactic shock and death—a result ascribed to mechanical irritation produced by an alteration in surface tension, due to beginning precipitation from the interaction of antibody and antigen. Mr. Embleton further suggested that anaphylactic antibody acted as a proteolytic ferment and liberated toxic hydrolytic cleavage bodies from antigen, basing his assumption upon

the observation that when complement fixation experiments were carried out in a diffusion membrane through which cleavage bodies pass against normal saline, complement is liberated again after a few hours.

Dr. F. H. THIELE (London) then discussed

Anaphylaxis in its Bacteriological Aspects,

pointing out that the post-mortem appearances observed in guinea-pigs dying from various forms of bacterial toxæmia or septicæmia were identical; moreover, they were exactly parallel with those seen in delayed anaphylaxis. It was further stated that the intravenous inoculation of unfiltered blood, serum, and effusions from animals dying from bacterial toxæmia or septicæmia into healthy guinea-pigs always resulted in acute anaphylactic death, from which Dr. Thiele assumed that there was a substance present in the blood and effusions of animals dying from bacterial septicæmia or toxæmia in sufficient quantity to cause acute anaphylactic death in the healthy animal; and that this substance was always present no matter what organism had given rise to the infection; and concluded that guinea-pigs dying from bacterial toxæmia or septicæmia all died in exactly the same way; the post-mortem findings were identical, the toxic substance found in the blood was identical (and was present in relatively large amount); that specific endotoxin characteristic of any particular bacterium was a myth; and that bacterial protoplasm was primarily non-toxic, and only became toxic when acted upon by antibodies present in the infected animal.

Dr. E. W. GOODALL (London) then spoke on the

Clinical Aspects of Anaphylaxis,

first contrasting the symptoms in a case of acute anaphylactic shock occurring after a subcutaneous injection of diphtheria antitoxin serum in a patient who had been treated with serum a year previously with those observed in a patient stung on the left foot by a wasp. He pointed out that anaphylaxis in the human subject was most frequently observed in connexion with therapeutic injections of antisera derived from the horse, and its symptoms needed to be carefully differentiated from those due to the so-called "serum sickness" which was not anaphylaxis, nor did its occurrence necessarily indicate the existence of allergy. The latent period of anaphylaxis in man was from 10 to 14 days; anaphylaxis then became established, and might last for as long as seven years. Serum sickness usually manifested itself during the latent period which followed the sensitising dose of horse serum, while anaphylaxis with all its symptoms more or less severe followed the second dose of serum immediately, or at any rate within a few hours. Dr. Goodall had had during the last 16 years 203 persons under observation who had been twice injected with horse serum at intervals varying from 14 days to 13 years. Of these 114, or 56 per cent., were anaphylactic; he therefore advocated an antiserum derived from a different animal from that supplying the sensitising dose for second injections. Some individuals, particularly asthmatics, were naturally in an anaphylactic state as regards horse serum, and great caution should be exercised in administering this protein to them. As a curious circumstance the speaker stated that the symptoms of anaphylactic shock which he had observed during the last few years were less severe than formerly, as were also the symptoms of serum sickness.

After Professor DIXON and Professor SIMS WOODHEAD had replied to the numerous questions put by various members of the audience, the members of the Section of Therapeutics withdrew.

Dr. MYER COPLANS (Leeds) then described his exceedingly interesting experiments upon

The Action of Asbestos and Allied Minerals on Bacterial and Other Substances,

which were undertaken during the course of some attempts to isolate the toxin from bacillus-free broth cultures of Bacillus tetani. Dr. Coplans found that when toxin broth was shaken with half its weight of asbestos fibre a moistened ball of fibre resulted, and if after five minutes this was squeezed the fluid exudate failed to give the biuret reaction and was no longer toxic. It was further found that watery solutions of agar, gelatin, and isinglass when brought into intimate contact with finely divided minerals of the asbestos group lost their power of solidifying. The finest carded varieties of asbestos were employed in the experiments without any further treatment, for preliminary experiments had shown that asbestos fibre underwent degradation, both physically and chemically, when fired or acted upon by even distilled water. The specific properties of such widely differing substances as agglutinin, cobra venom, and diastase solution were entirely removed by the asbestos fibre, and radio-active substances similarly treated diminished markedly in activity. Virulent strains of such pathogenic bacteria as B. diphtheriæ, B. anthracis, and B. pestis were cultivated in media containing 7·5 per cent. by weight of Russian asbestos fibre, with the result that they lost a great measure of their virulence during two months' growth and showed marked changes in morphology and staining reactions.

To Dr. Coplans's communication was appended a note by his colleague, Mr. S. A. EDMONDS, A.R.C.Sc., on

The Action of Asbestos upon Radium and Thorium in Solutions of their Salts,

describing experiments, which showed that after contact for varying periods the fluid expressed from the asbestos fibre had lost from 4/7 to 10/11 of its activity, the asbestos itself retaining the remainder and being correspondingly radio-active.

Dr. COPLANS and Dr. W. GIBBS LLOYD (Leeds) contributed a paper on

The Action of Asbestos on Certain Physical Substances,

which was read by Dr. Lloyd. It detailed the experiments in which various enzymes, such as diastase, pepsin, rennet; carbohydrates, such as starch, dextrin, and dextrose; proteins, such as egg albumin and peptone; alkaloids, such as curare and strychnine; and hormones, such as suprarenin and adrenalin, were placed in intimate contact with asbestos fibre for varying periods in the proportion of 2 c.c. of the solution or suspension substance per gramme of asbestos fibre, with the result that the substance under study was invariably absorbed by the asbestos and only an inert fluid could be expressed from the mineral mass.

FRIDAY, JULY 25TH.

The session opened with a paper by Mr. W. C. LYONS (Skipton) on

Proteose-free Tuberculin,

which was read by Dr. Lloyd, detailing the clinical observations made by the author in the Eastby Sanatorium, upon the diagnostic and therapeutic value of tuberculin prepared from cultivations grown in contact with asbestos fibre. This work, suggested by and, indeed, the direct outcome of Myer Coplans's experiments, was the first of the many practical applications that will undoubtedly arise from the valuable "asbestos" research detailed in the previous day's proceedings. In the course of his paper the writer showed that many of the diagnostic anomalies of old tuberculin were not due to the action of tubercle toxin but to the associated proteoses. For diagnosis he advocated the intradermal method introduced by Lignières and Mantoux, and stated that the proteose-free tuberculin gave 98 per cent. positive reactions in known tuberculous cases. For treatment he advised the use, speaking generally, of an initial dose of 0·001 c.c. increased every other day by 0·001 c.c. up to a maximum of 1·0 c.c., the results of which compared very favourably with those obtained with other forms of tuberculin and warranted a much more extended trial.

Dr. R. M. BUCHANAN (Glasgow) then followed with a paper entitled

Empusa Muscæ as a Trajector of Bacterial Infection,

in which, after summarising the work already done in connexion with flies as carriers of disease, the speaker detailed his own investigations into the life-history of Empusa muscæ. Although he had, so far, been unable to cultivate the fungus upon artificial media, he had observed the germination of some spores upon glucose agar. With the help of a very beautiful series of lantern slides Dr. Buchanan was able to show that the growth of the fungus within the fly infected all the tissues from the proboscis to the last segment of the abdomen, but that the alimentary tract was usually practically free. Usually, too, the fungus could be seen closely surrounding the ova but without penetrating the shell, and he considered it probable that infection was spread from one generation to another by means of the larvæ. When the fungus reached the body surface spores developed upon aerial hyphæ, and when mature were shot

off to the distance of some inches, carrying with them bacteria from the body surface of the fly, an observation which explained the title of the communication.

An animated discussion ensued, in which Dr. S. MONCKTON COPEMAN (London), Dr. BERNSTEIN, and the PRESIDENT took part, after which the staff of the John Howard McFadden Research Fund, headed by Mr. H. C. ROSS, demonstrated

The Jelly Method of Staining Living Cells,

in which, instead of merely mixing the cells to be stained with the solution of the aniline dye, the stain was mixed with the jelly and the cells spread out over its surface under a cover glass. The method was an improvement over the older processes of intravitam staining in that there was no contraction or coagulation due to fixation, and fallacies due to death of the cells or distortion by powerful reagents were reduced to a minimum. During the course of the demonstration a rabbit was shown suffering from a naturally acquired disease of the generative organs which was stated to occur in about 1 per cent. of all rabbits, and was known to the dealers as rabbit-pox, a disease unknown to the majority of the members of the section.

Dr. GALT then demonstrated a collection of apparatus used in diagnostic blood investigations, and also a series of stained blood films to illustrate the various points referred to in his paper read at the opening session.

Dr. MYER COPLANS demonstrated (1) a collection of crude and manufactured asbestos minerals, including some finely carded asbestos made up in the form of surgical swabs; (2) a continuous type of centrifugal separator fitted with a device for automatic self-cleansing; and (3) a conductance salinometer including the whole of the apparatus used by Dr. Coplans in taking the continuous record of the salinity of the Northern Atlantic.

MEDICAL SOCIOLOGY.

WEDNESDAY, JULY 23RD.

President, Dr. REGINALD JOHN RYLE (Brighton).

The PRESIDENT, in the course of an introductory address, remarked that the purpose of the Section of Medical Sociology was to introduce an examination of problems which were of great interest to the public at large, as well as to the medical profession. None could have read any one of the reports issued by Royal Commissions on housing, education, inebriety, feeble-mindedness, or destitution without realising that there was involved in every one of them a larger or smaller social problem with which the profession of medicine was concerned.

The section discussed the question of "Eugenics," the opening paper, read by Mr. EDGAR SCHUSTER, M.A., D.Sc., the first Galton Research Scholar, dealing with

The Scope of the Science of Eugenics.

Dr. Schuster remarked that the existence of a kind of antagonism between the arts of medicine and eugenics had been recognised for some 2400 years. Medicine to-day, as in Plato's day, sought to lengthen out lives of all sorts, and did not presume to judge which were good for nothing and which were otherwise; it enabled weak fathers and mothers to have children, and in this respect might be accused with some justice of being dysgenic. The fact that the work of doctors on behalf of humanity by its very success might lead to results which eugenists deplored, imposed a sort of obligation on the medical profession to make what contributions it could to the science of eugenics, which in some of its aspects might claim to be a branch of preventive medicine, since prevention was proverbially better than cure. Dr. Schuster proceeded to indicate some of the principal problems in eugenics as they affected medical men. The study of the inheritance of disease, he remarked, must be almost entirely in the hands of the doctor; on the question of environment during the period of birth medical men had much to say, and the diseases of childhood—which might be selective in their action—also came within the sphere of medicine.

Dr. HARRY CAMPBELL, physician to the West End Hospital for Nervous Diseases, read a paper on

Eugenics from the Physician's Standpoint.

He discussed the constant interference of civilised man with the principle of natural selection, saving, by artificial means, defective types, and thus lowering the standard of racial fitness. The vaunted triumph of man over the law of natural selection, however, was only a partial one; the elimination of the morally unfit was still proceeding. The lazy, the intemperate, the dishonest, the aggressively anti-social, those who loved not home life, those who shunned the cares and self-sacrifice demanded of fatherhood and motherhood—those were being eliminated, while their opposites were surviving, and the attributes which secured their survival were becoming racially accentuated. Man was still evolving on the moral side. Dr. Campbell also considered the operation of natural selection on physical man, pointing out the influence of diet, of the attack of pathogenic microbes, conditions of living, &c., and also indicated various classes of disease, sufferers from which should not procreate. He did not advocate any legal restraint on eugenically unfit marriages; the object should be rather to foster the development of a eugenistic conscience in the community. To this end the public should be educated in the elementary principles of evolution and be taught to realise the more glaring facts of heredity.

Dr. J. STEWART MACKINTOSH (London) discussed

The Migratory Factor in Eugenics,

giving the results of his observation of the effect upon natives of a dry and sunny region of coming into a damp and sunless one, and discussing the influence upon social development of these facts, in the light of the rural exodus in this and other countries and the growth of industrialism.

In the course of the discussion of the papers

Mr. E. J. LIDBETTER (London) pointed out that natural selection was not always a beneficent power. If the community allowed slums to exist the operation of natural selection through adaptation must produce a population that could persist in no other way, and in that case the surviving fit were not necessarily the best. Efforts must be made to transfer the balance of fertility and survival from the least to the most desirable.

Sir JAMES BARR urged that the nation should breed not only for physique but for moral and intellectual capacity. Medical men should warn parents of the undesirability of procreation in certain circumstances.

Miss A. H. P. KIRBY, secretary of the Feeble-minded Association, called attention to the lack of facilities for the study of feebleness of mind by medical students. If the Mental Deficiency Bill were passed numbers of posts would be thrown open requiring expert knowledge, and training would be necessary.

Dr. B. DUNLOP and Mr. C. V. DRYSDALE, D.Sc. (London) advocated instruction of the poor in the methods of limitation of families as a means of securing better conditions of living.

Prince P. KROPOTKIN doubted whether attempts at the "elimination" of the unfit could be effective in view of the great number of this class. He thought medical men were right in having given their chief attention hitherto to combating the causes of degeneracy by means of social hygiene.

Dr. C. W. SALEEBY (London) discussed the influence of malnutrition upon future parenthood; Monsignor Canon JOHNSTON (Brighton) asked whether love or strong offspring was the purpose of the Creator in designing difference of sex; Dr. F. E. WYNNE (medical officer of health of Wigan) defended public health measures against the inferential condemnation of eugenists; and Dr. W. ERNEST JONES (Inspector-General of the Insane in the State of Victoria, Australia) gave some interesting figures as to the influence of heredity, alcoholism, and venereal disease in the production of mental defectives.

THURSDAY, JULY 24TH.

The subject discussed to-day was Crime and Punishment.

Dr. JAMES SCOTT, late Governor of H.M. Prison, Holloway, read a paper on

The History of Crime and Punishment.

He discussed the view that crime was a disease, inherited or acquired, and that criminals should be pitied and not blamed, put under kind treatment and not punished. He agreed with employing all the preventive methods possible by improving social conditions, but said that, as criminals were likely to continue for a long time to come, society would have to protect itself by dealing with them in some

way. The public should avoid mawkish sentimentality. A healthy public opinion which loved order and deprecated crime was a most important factor in social well-being. The law regarding insanity and crime was not in a very satisfactory state; lawyers and medical men not infrequently differed. Responsibility at law for crime was a large and difficult subject, and the question of partial responsibility had been much discussed. Dealing with the historical aspects of the subject, Dr. Scott mentioned the advantages which scientific discoveries often afforded criminals; he also discussed improved methods in the detection of crime, and contrasted the severity of the punishments of a century ago with those of the present day, concluding with a commendatory allusion to the Borstal system.

Dr. C. A. MERCIER (Parkstone) read a paper on

The Origin of Crime.

He pointed out that crime was a consequence of the social state; a person living in solitude could not commit a crime, any more than a man in an arid desert could drown himself. There were three ways in which an act might be injurious to society and to the social state. It might attack society directly by striking at its basis; or indirectly by striking, not at society as a whole, but at some individual member or members, and so tending to break it up piecemeal; or it might attack the future welfare and strength of society by striking at the racial principle. If crime consisted in acts that tended to the destruction of society, and if man was not adapted to any mode of life other than the social life, how was it that he had criminal propensities? Man shared sociality with innumerable kinds of animals, and to some of these animals the maintenance of the social state exacted far greater sacrifices than man was called upon to make. Yet of this sacrifice man was often incapable. The reason was that, immeasurable as seemed the time during which man had been socialised when that time was compared with a single human life, it was but as yesterday to the number of generations during which the social insects had been socialised. If crime consisted of acts destructive or detrimental to society it was clear that society must suppress crime or itself undergo dissolution. Again, since crime was due to the dominance of selfish over social desires, by rendering the result of crime detrimental and unpleasant to the criminal his selfishness could be enlisted in the interests of morality, and he could be induced to do that for his own sake which he would not do for the sake of his fellows. If, on the other hand, the criminal was treated as some soft-hearted sentimentalists desired, by telling him he was not a scoundrel, but an ill-used, misunderstood unfortunate, and if prison life were made in many respects pleasanter than the life he could honestly lead at large, it must not be wondered at that the statistics of crime should increase.

Sir H. BRYAN DONKIN dealt with

The State Punishment of Crime.

He criticised much of the modern literature on criminology which was readily absorbed by the public from books, novels, plays, newspapers, and magazines, and which tended to favour certain academic doctrines that questioned or denied the right of the State to punish criminals. To his knowledge these views had considerable effect upon persons engaged in criminal pursuits. In view of the complexity of the subject Sir Bryan Donkin, to save time, stated certain assumptions—the chief of which was that the State was justified in coercing law-breakers—and proceeded to urge that loss of liberty alone was a powerful deterrent from crime. He also indicated directions in which the careful psychologist could be of service to the practical penologist, both in securing that mental defectives should not suffer more than was necessary for the social object in view, and by certifying these criminals as unfit for liberty, thus putting an end to the fruitless method of dealing with them by frequently recurring sentences. Although denying that reformation was the sole or even the first object of the State in dealing with the criminal, Sir Bryan Donkin mentioned the sound work being done under the Prisons Board at the State reformatories for young convicted criminals.

In the discussion which followed Mr. A. O. JENNINGS, Registrar of the High Court of Justice, expressed the wish that the medical profession would give an opinion as to whether the ultimate decision on the question of responsibility should be left as now to a lay jury after hearing medical evidence, and under the direction of the judge, or whether medical men preferred some other tribunal.

The Rev. C. B. SIMPSON, Chaplain Inspector of H.M. Prisons, supported the view that punishment had a strong deterrent effect.

Prince KROPOTKIN, who introduced himself as "an old gaol-bird," having had ample experience of prison life in Russia and France, described prisons as universities of crime, and commended the efforts now being made, specially in the United States, towards substituting prevention of crime for its punishment.

Professor BENJAMIN MOORE (Liverpool University) declared that crime was an indication of social disease; if crime did not exist many of the greatest social evils would never be discovered or remedied.

Dr. E. S. PASMORE, Medical Superintendent of Croydon Asylum, urged that there should be associated with the judge a medical assessor, who had large experience of mental cases in asylums.

Miss G. ALLEN (London), who said she had been in prison at Holloway as a suffragist, mentioned a curious effect which the lack of ventilation at Holloway had upon herself. Although she had always been a total abstainer, the atmosphere induced in her a tremendously powerful craving for alcoholic drink.

Mr. W. R. BISSCHOP, LL.D. (London), Mr. R. DIXON KINGHAM (London), and Captain ARTHUR ST. JOHN (honorary secretary of the Penal Reform League), also spoke, and the meeting unanimously passed the following resolution:—

That it be recommended to the Council of the British Medical Association to appoint a committee of members of the Association, with power to co-opt others not members of the medical profession, to consider the present state of the law with regard to the legal responsibility for crime, and to issue a report with recommendations to the Council.

FRIDAY, JULY 25TH.

The concluding session of this section was devoted to a discussion on Hospitals in Relation to the State, the Public, and the Medical Profession.

Professor BENJAMIN MOORE, F.R.S., professor of biochemistry in the University of Liverpool, read a paper advocating

State Hospitals.

He mentioned the strain which the Insurance Act had thrown upon the voluntary hospital system, and denied that State aid would have the effect of drying up the sources of voluntary support. When it was first proposed in Liverpool, Manchester, Leeds, and elsewhere, that the local university should go on the rates there were the same wise shakings of the head as there were now over the question of the public control of hospitals. Nevertheless, wealthy merchants continued to endow chairs, and the Universities were all financially dependent upon just such a happy combination of voluntary aid, municipal rates, State taxes, and payment of fees as might be instituted in support of municipal or State hospitals. Gloomy prophecies had been falsified by the march of events, and what modern universities had done for education a modernised hospital system was capable of doing for the study, prevention, and treatment of disease.

Mr. I. G. GIBBON, D.Sc. (author of "Medical Benefit in Germany and Denmark"), dealt with the financial organisation of

The Municipal Hospital in Germany,

mentioning that in some districts the hospitals were built and maintained by the States and in others by various local authorities. A large increase in hospital provision had been necessitated by insurance legislation, and a general tendency on the part of town dwellers to have serious illness treated at an institution. Medical officers of hospitals were allowed to receive remuneration additional to their salaries, and patients were divided into classes and paid proportionately for the treatment. Nevertheless, the total amount to be met from public funds was very high.

Professor WILHELM PFEIFFER, medical superintendent of the Municipal Hospital, Essen, Germany, gave some particulars as to

The German Hospital in its Relation to the Medical Profession.

He described the efforts of the Leipziger Verband to obtain better conditions of service for the medical profession, especially with a view to making the medical superintendent the highest official in the hospital in general as well as medical matters.

Dr. GROBER, Professor of Clinical Medicine in the University of Jena, discussed

The German Hospital and German Insurance Legislation.

He mentioned that the organisations undertaking the insurance of the people had greatly increased their funds, and preferred to send patients suffering from comparatively minor illnesses to the hospitals and to pay for their treatment. This had led to a great increase in hospital provision, the number of hospitals in Prussia having increased since the seventies from 888 to 2314, and the number of beds from 37,039 to 160,437. The establishment of private hospitals was permitted, but the Government enforced certain rules and examined the owner or manager concerning capability. All hospitals, both public and private, were subject to building regulations of a special kind. In Germany to be received into a hospital was no longer an act of charity, but a contract between the owner and the patient.

In the discussion Sir HENRY BURDETT, K.C.B. (London), said that never in the whole of his 48 years' experience of hospitals had the outlook been so serious. Thanks to the voluntary system this country had a system of hospitals which he confidently declared to be, on the whole, the best in the world, and he considered that what was wanted at this stage, as a first essential to the wise solution of the hospital problem, was coöperation and intercommunication between all voluntary and municipal institutions for the relief of the sick. The need for such a policy had been emphasised by the inception of national insurance. The National Insurance Act could not to-day exist as a financial proposition apart from the voluntary hospitals. Yet in return for giving all this medical aid to in-patients at the cost of hundreds of thousands a year the National Insurance Act gave the hospitals nothing. They could not hold over the voluntary hospitals the bogie of Government interference and control when the Government were the debtors. The Government would have to provide all that the hospitals cost to maintain before they could claim to control the hospitals. Politicians were the curse of the sick to-day in this country. The cause of the sick was nothing to the politician unless he could serve Lazarus up in some form which was going to be attractive to the electors. The present position of the voluntary hospitals was therefore that the State was under an enormous obligation to them. Politicians already said that they were going to provide insurance for the families and dependents of the insured. The effect of that would be an enormous pressure upon the hospital beds. The only way in which the population as a whole could obtain hospital care was by pay wards and pay pavilions attached to the voluntary hospitals wherever possible. The rights of the medical profession could alone be protected under the pay pavilions system. There would be in London an opening when St. George's and Westminster Hospitals amalgamated. It was said that the alternative to his proposals was a system of State hospitals. The Poor-law Commission went into this question, and found that, on the lowest estimate, the effect of having State hospitals in England must be that it would add at once 20 millions a year to the National Budget. Was that a proposition which any politician dare put forward? Every voluntary hospital should look at its present circumstances. Many had unused sites attached to them, and they ought to consider all their site and what it was capable of providing in the way of additional buildings, pay wards, extensions, or whatever might be necessary in those respects. It was the extension of our present system which was needed and the maintenance for the additional beds for paying patients and insured patients. What could not be raised by subscriptions was the cost of buildings and extensions. This must be met by loans, and not by appeals to the public; and those loans could be granted by using the credit of the country on a basis which was recognised and adopted by Parliament in regard to municipal enterprises. The difficulty as to maintenance would be met by *pro rata* payments for treatment of insured persons by Approved Societies. The matter was one of business between the State and the hospitals. With regard to the State Medical Service agitation Sir Henry Burdett declared amidst laughter that that was a dog which would not fight.

Professor J. A. LINDSAY (Belfast) thought that three grades of diet and three classes in the hospitals, as in Germany, would never be regarded as satisfactory in this country; further, that the scale of salaries in German hospitals left something to be desired. It was a great anomaly that no provision was made in this country for hospital treatment for the large middle class.

Mr. CHARLES V. DRYSDALE, D.Sc. (London), expressed the view that the elaborate hospital system of Germany had checked the prudence of the community and had led to an increase of the death-rate outside the hospitals.

Dr. H. GERVIS (Brighton) remarked that the great blot on the Insurance Act was that it placed no means of special diagnosis within reach of the general practitioner. Eventually every large town would have a hospital which would be the centre of the medical work of the area. He believed there would be no difficulty in obtaining money from the State or from the State in combination with the charitably disposed.

The proceedings of the section closed with a vote of thanks to the President.

DISEASES OF CHILDREN (INCLUDING ORTHOPÆDICS).

WEDNESDAY, JULY 23RD.

President, Dr. G. F. STILL (London).

Dr. F. J. POYNTON (London) opened a discussion on

Affections of the Heart in Childhood.

He said that heart disease in childhood was usually the result of an infective process, and the rheumatic infection was the most frequent. Overstrain was not a serious danger to a young healthy heart, but might cause mischief in a heart previously exposed to infective trouble, however mild. Diplococci obtained from the tonsils would produce acute inflammatory changes in the hearts of rabbits, and one site of infection in children was certainly the tonsils. Bad teeth and pyorrhœa did not seem to have much connexion with cardiac disease. Preventive measures were sufficient clothing, protection from damp, attention to "growing" pains and to sore-throats. The tonsils should be enucleated if diseased; tonsillotomy was not good. Salicylates were not a specific, and vaccine-therapy was unsatisfactory. Theosin sodium acetate gave excellent results in cardiac œdema. Strychnine was preferable to camphor as a tonic. Anasarcin was not so efficient as theosin.

Dr. CAREY COOMBS (Bristol) said that the pulse in childhood was generally irregular. Therefore irregularity of pulse was not confirmatory evidence of heart disease unless the polygraph showed that it conformed to a known type of cardiac disease irregularity. Rheumatic infection entered through the lymphoid tissue of the nose and throat, and attacked the heart through arterial channels. He supported the use of salicylates, and removal of the tonsils when diseased.

Dr. W. C. CHAFFEY (Hove) contributed the family history of 37 cases of heart disease in children. Phthisis occurred in near relatives in 40 per cent., and acute rheumatism in the same degree. He used salicylates combined with alkalies and strophanthus and blisters along the sternal margin.

Dr. MARY C. MURDOCH (Hull) said that pericarditis was often overlooked. Leeches to the left border of the sternum frequently checked effusion. In operating it was important to remember that a pericardial effusion might be loculated.

Dr. REGINALD H. MILLER (London) said that rheumatism and tuberculosis were rarely found in active condition at the same time in the same patient. Salicylates were antagonistic to the rheumatic virus itself, but could not be expected to influence the fibrotic changes resulting therefrom. He was not in favour of huge doses.

Dr. W. P. S. BRANSON (London) said that lesions of the upper air passages were closely connected with rheumatic invasions. Treatment of the nasc-pharynx would often prevent recurrent attacks. He had no confidence in local applications. Amputation of the tonsils was practically useless in this respect; the only sound measure was enucleation.

Dr. A. E. NAISH (Sheffield) said that after acute rheumatism children should be guarded from chill, and especial attention should be paid to this point in convalescent homes. Vaccine treatment probably had a future.

The PRESIDENT referred to the possibility of contagion in acute rheumatism, and thought that a room in which such a case had occurred ought to be disinfected. Tonsillotomy was disappointing. Enucleation promised more, but was still somewhat on its trial. Exposure to cold and damp was certainly a predisposing factor.

Mr. JAMES H. NICOLL (Glasgow) read a paper on

The Surgery of Childhood,

in which he advocated the more extensive use of the out-patient department for operations on children. An experience of over 20,000 operations had convinced him that there were few cases which could not be dealt with in this manner. The question of portability of the patient was the usual limiting factor. Mr. Nicoll sketched the organisation of an out-patient department designed to this end.

THURSDAY, JULY 24TH.

Mr. T. H. OPENSHAW, C.M.G. (London), opened the discussion on

The Choice of Methods in Dealing with Paralytic Deformities in Children

in a paper containing a wealth of material. Deformities might be due to joints giving way under the body weight, to the uncontrolled action of a sound group of muscles, or to spasm of muscles. The greatest deformity ensued from the complete paralysis of one muscle group; the more distributed the paralysis the less the deformity. Nerves might be compressed by bony growth following epiphyseal injury. Cases were related in which the ulnar and popliteal nerves had been freed by the use of the chisel. In simple paralytic talipes equinus he divided the tendo Achillis subcutaneously and obliquely into anterior and posterior flaps and then partly remedied the deformity. Then, after a fortnight, the deformity was corrected to the full. Transplantation of one tendon into another was preferable to fixing into the periosteum of a new site, and transference of a peroneus longus to a tibialis posticus gave the most satisfactory results in the whole range of tendon transplantation. He always used absorbable material for sutures, and never buried silk. Arthrodesis of the ankle gave good results in flail ankle. Ten degrees of hyperextension were normal in the knee-joint; it relieved the muscles and allowed superincumbent weight to be taken up by the posterior ligaments. If this normal degree be exceeded it tended to grow rapidly worse (genu recurvatum). Arthrodesis for flail knee, the patella not being removed, was recommended. In dealing with the shoulder-joint attention was drawn to the important action of the subscapularis, and to the excellent results which followed division of its tendon in some cases. In paralysis of the deltoid transplantation of the musculo-spiral fibres to the middle head of the triceps into the circumflex nerve was strongly advised.

Professor FOERSTER (Breslau) described his method of posterior root section in the treatment of spastic paralysis. This was designed for the relief of spastic symptoms only, and was suited to stationary or very slowly progressing cases, where the voluntary activity was still conserved to a certain degree. It was limited to cases in which the spasticity was general; when only single muscle groups were attacked other simpler methods were preferable. Removal of flexor spasticity was especially important. Electrical stimulation of the roots was used as a guide during the operation, since the relation of each root to the single muscle was subject to individual variation. The mortality of operation was 5 per cent. in 138 cases of Little's disease. The patients afterwards underwent prolonged training in the various actions of walking, &c.

Mr. ROBERT JONES (Liverpool) said that as regards arthrodesis he confined himself practically to the shoulder, ankle, and mid-tarsal joints. Arthrodesis of the knee should only be done in cases of adults with flail knees when an apparatus, for some reason or other, was impracticable. Muscles might recover after a surprisingly long period, and when least expected to; arthrodesis was frequently done without giving sufficient time for this chance to happen. He preferred to fix transplanted tendons through a hole bored in the bone. It was necessary to train the patient's movements afterwards to avoid accident from undue transference of body-weight. He appreciated the careful after-training given to Professor Foerster's patients. Any child with spastic paraplegia and sufficient intelligence could be made to walk; standing alone to learn balance was the first point to be taught; then followed walking, with a side-to-side rocking step.

Mr. E. LAMING EVANS (London) had dealt with four cases of Little's disease by Foerster's method. The laminæ of 11 and 12 D. and 1 L. were removed, and in 1 case 2 L. also. The largest root was identified as the 3 S., and the roots were divided on alternate sides—right side, 2 S., 5 L., 3 L.; left side, 1 S., 4 L., 2 L. The operation was done in one stage. Two cases were improved, one showed no benefit, and the fourth was quite recent. The careful education of movements afterwards was all-important.

Mr. W. J. MIDELTON (Bournemouth) recommended counter-irritation along the spine as of value in the early stages of infantile paralysis, with a view to checking progressive activity of the infection. He practised multiple skin punctures, afterwards painting the surface with a croton oil and cantharides mixture.

Mr. R. C. ELMSLIE (London) splinted paralysed limbs from the first and delayed operation for at least two years. Tendon transplantation was most valuable in correcting faults of individual muscles. Arthrodesis of the knee was only advisable in exceptional circumstances; an apparatus was most generally suitable.

FRIDAY, JULY 25TH.

Mr. C. B. LOCKWOOD (London), in opening a discussion on

The Diagnosis and Treatment of Acute Inflammatory Affections of the Abdomen in Children,

dealt with cases in children up to 14 years of age. In diagnosis modern methods of scientific investigation were of little avail; there was no time to apply them. In the most acute cases there might be no preliminary symptoms whatever; rigors were not usual in children, but when they did occur they pointed to a most virulent infection—generally streptococcic. An intestinal obstruction that could not be overcome by test enemata demanded operation. When the acute abdomen was accompanied by vomiting and diarrhœa a false diagnosis of ptomaine poisoning might be made. Any focus of tenderness in such cases was highly suspicious. It was important to recognise the fœtal type of appendix, in which that organ hung down into the pelvis. He had found this type 11 times in 25 consecutive cases in children. Such an appendix was most favourable to concretions, and when inflamed often caused no anterior abdominal tenderness. He regarded an appendix of the fœtal type as one of the most important predisposing causes of appendicitis in children. In such cases a thorough rectal examination was of the utmost value, and was especially indicated by pain during defæcation or micturition, or retention of urine, or by pus in the urine. The younger the child, the less chance there was of an abdominal inflammation being localised. The pulse, steadily quickening and becoming irregular, was the best guide to the severity of the infection. The occasional difficulty in diagnosis between a peripneumonic inflammation and an appendicitis was best met by stethoscopic examination and observation of the respiration.

Mr. R. H. A. WHITELOCKE (Oxford) stated that diagnosis was the important point; the surgical treatment was now fairly standardised. Tympanites and constipation, which form such a good clue in adults, were often absent in children. Rectal examination was very important. The difficulty in diagnosing an early pneumonia from an abdominal inflammation was sometimes a very real one. In male children especially flexion of the right thigh might be noticed before any abdominal rigidity. In female children the pain of appendicitis was often referred to the left side (in 33 per cent. of 40 of his cases).

Dr. W. J. TYSON (Folkestone) said that thorough examination of the chest was very important in some doubtful cases. Operation to clear up an uncertainty was quite justified. He suggested a committee of inquiry into the prevalence and causes of appendicitis.

Mr. FIRMIN CUTHBERT (Gloucester) stated that rectal examination in children was usually very easy and always of great value in abdominal cases. It might sometimes be advisable for the surgeon to call in a physician to help in diagnosis. Difficulties might arise—e.g., in pneumonia, typhoid fever, or the gastric crises of locomotor ataxia.

Mr. L. A. PARRY (Hove) said that appendicitis occurring after operation for tonsils and adenoids might be due to the presence of swallowed blood in the intestine.

Mr. H. BRAMWELL (Frome) urged that influenza of the gastric type, with the resulting intestinal catarrh, was probably responsible for some of the increase in appendicitis.

Dr. A. E. NAISH (Sheffield) said that irregularity of the pulse was extremely common in healthy children; the irregularity in the acute abdomen might be differentiated by the use of the polygraph. Some early pneumonias showed none of the usual clinical signs.

The PRESIDENT said that appendicitis might occur in infancy (i.e., under 2 years), but it was rare, the diagnosis difficult, and its course rapid. In all cases the younger the child the more serious the prognosis. Acute pancreatitis following mumps was an occasional cause of acute abdomen in children. These cases tended to recover. There might be absolutely no discoverable signs at the onset of a pneumonia, and rapidity of respiration was not a reliable guide. Many bilious attacks and some cases of cyclic vomiting arose from an appendicitis. Epidemic outbreaks of appendicitis in schools, often concurrent with epidemics of tonsillitis, suggested the possibility of some infectious agent.

Mr. G. MORGAN (Brighton), Mr. G. L. CRIMP (Walton-on-Thames), and Dr. W. C. CHAFFEY (Hove) quoted illustrative cases.

Mr. J. S. KELLETT SMITH (London and Eastbourne) read a paper upon

The Necessity for Selection and for Skilled Supervision in the Treatment of Spinal Deformities by Exercise.

There was a distinct danger of cases of this kind drifting into the hands of people who held training school certificates, but had little anatomical knowledge. Efficient exercises were powerful measures, and demanded as much skill and care as the use of any other powerful remedy, whether surgical or medical. Many cases were quoted to show the advisability of sometimes combining mechanical methods with treatment by exercise, and various types of patients were instanced in whom some factor other than the spinal deformity exerted an influence both upon the treatment and the progress of the case. The selection of suitable exercises for each individual was an essential to success.

Mr. A. S. BLUNDELL BANKART (London), in a paper on

Acute Poliomyelitis,

absolutely condemned the treatment of recovering paralysis by massage, electricity, exercises, and removable splints. He advocated continuous fixation of the paralysed parts in plaster-of-Paris. This avoided passive stretching and ensured complete relaxation of the muscles.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MEETING OF COUNCIL.

AN ordinary meeting of the Council was held on July 31st, Sir RICKMAN J. GODLEE, the President, being in the chair.

In accordance with a report of the Court of Examiners diplomas of Membership were granted to 85 successful candidates, and in conjunction with the Royal College of Physicians of London Diplomas in Public Health were issued to 29 successful candidates.

It was resolved to recognise the following institutions for instruction in Chemistry and Physics for the Examining Board in England: Exeter School, Northampton and County School, Northampton, and Taunton School.

Mr. Arthur Rendle Short was elected a member of the Board of Examiners in Anatomy and Physiology for the Fellowship, and Mr. Norman Godfrey Bennett was elected a member of the Board of Examiners in Dental Surgery.

The following were elected Honorary Fellows:—

Raffaele Bastianelli, Professor of Clinical Surgery, Royal University of Rome; August Bier, Professor of Surgery, University of Berlin; Frederic Dougan Bird, M.B., B.S., Lecturer in Surgery, University of Melbourne; George Washington Crile, M.A., M.D., Professor of Surgery, Western Reserve University, Cleveland, U.S.A.; Harvey Cushing, M.D., Professor of Surgery, Harvard University; Anton Freiherr von Eiselsberg, LL.D., M.D., Professor of Clinical Surgery, University of Vienna; Ernst Fuchs, M.D., Professor of Ophthalmology, University of Vienna; Henri Hartmann, M.D., Professor of Clinical Surgery, University of Paris; Werner Körte, Geheimer Sanitäts-Rath, Director of the Surgical Division of the Urban Municipal Hospital, Berlin; William James Mayo, M.D., Surgeon, St. Mary's Hospital, Rochester, Minn., U.S.A.; Ambroise Monprofit, M.D., Professor of Clinical Surgery, School of Medicine of Angers, University of Paris; John Benjamin Murphy, A.M., M.D., LL.D., Professor of Clinical Surgery, Northwestern University, Chicago, U.S.A.; Johan Nicolaysen, M.D., Professor of Surgery, Royal Fredericks University, Kristiania; Vladimir A. Oppel, Imperial Military Academy of St. Petersburg; Francis John Shepherd, M.D., C.M., LL.D., Professor of Anatomy and Operative Surgery, McGill University, Montreal; and Theodore Tuffier, Professeur Agrégé de Chirurgie à l'Université de Paris.

A letter was read from Mr. Jonathan Hutchinson thanking the Council for their resolution of condolence on the death of his father, Sir Jonathan Hutchinson.

A letter was also read from Mrs. Willett, thanking the Council for their resolution of condolence on the death of her husband, Mr. Alfred Willett.

New Inventions.

AN ABDOMINAL RETRACTOR.

IN many abdominal sections a suitable exposure of the field of operation adds considerably to the facility of their performance. This is particularly true in gynæcological work in which the depth of the pelvis affords additional difficulty in any surgical procedure. A retractor is frequently needed that not only gives ready access to the site of operation, but is of simple design and manipulation. It should be capable of easy enlargement and it should be possible to alter the position or inclination of any blade without interfering with the instrument as a whole. To meet these conditions I have devised the abdominal retractor, which is illustrated in the accompanying Figs. 1 and 2.

FIG. 1.

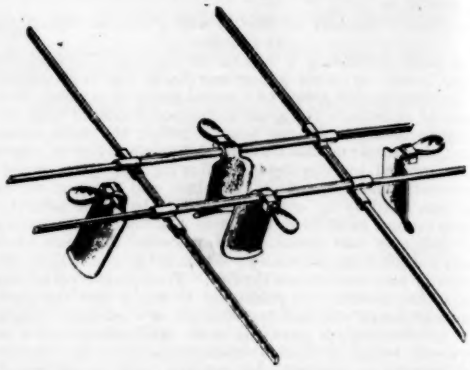
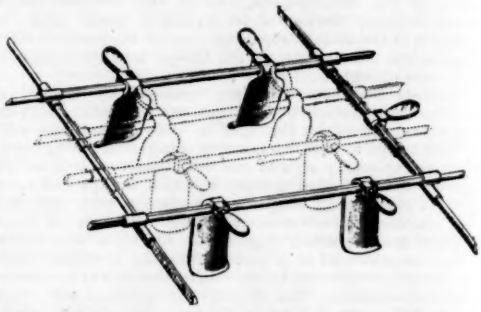


FIG. 2.



It has been made for me by Messrs. Down Bros., 21 and 23, St. Thomas's-street, London, S.E., and for it the following advantages are claimed: 1. Its mechanics are simple, it is light, of small bulk, and introduced with ease. 2. After introduction it is self-retaining and remains absolutely fixed, and attachment or detachment of any blade can be speedily accomplished. 3. Enlargement is readily effected in either direction. 4. The position or inclination of any blade is altered at will, and by placing the blade in any desired position the frame is automatically locked. There is thus no need for any binding screws, &c., on the frame itself. 5. Special blades have been devised for attachment in any desired position at either end of the retractor—e.g., in pelvic work the intestines, after being packed off with gauze, are held aside by a special framework (Fig. 3) which is connected to the frame of the instrument.

FIG. 3.

HAROLD CHAPPLE, M.C. Cantab., F.R.C.S. Eng.
St. Thomas's-street, S.E.

THE LANCET.

LONDON: SATURDAY, AUGUST 9, 1913.

International Medical Congress: The Address in Medicine.

THE Address in Medicine before the Seventeenth International Congress of Medicine was delivered by Professor A. CHAUFFARD, professor of clinical medicine in the University of Paris, and will be found on another page of this issue of THE LANCET. With the magnificent present and traditional history of France in regard to clinical medicine, it is not surprising that the important duty of delivering the Address in Medicine before an international gathering of leading physicians and surgeons should have been committed to a representative of that nation, while on all hands it will be allowed that no better spokesman could have been found for the purpose than Professor CHAUFFARD, who discharged his task alike with a full sense of the responsibility that lay upon him and with the grace and neatness always expected from a learned Frenchman. Under the title of Medical Prognosis, its Methods, its Evolution, its Limitations, he outlined the history of clinical medicine with great exactness, and even with thoroughness, although he dealt with his far-ranging subject in the space of less than one hour. Like some charming painter of the Barbizon school he managed to get upon a small canvas a large landscape with the due atmospheric setting. He was merely suggestive in places where more detail would have destroyed the values of the picture, but was vivid and detailed at points where the scheme of composition required it. Regarding medicine from the clinical point of view—this being the scope which he gave to his words—he ranged from the Hippocratic era down to the latest discoveries in bacillary and amœbic infection, and between these two extremes showed how medicine had been passing steadily from an art to a science, and how it was from day to day adding to the stores of its knowledge, sifting its acquisitions, and testing even its accepted facts.

In the Hippocratic era the art of objective vision was brought to its highest pitch, and we agree with Professor CHAUFFARD when he said that the lessons learned in ancient Greece, and since applied through many centuries of observation, ought not to be lost because with what may be called "the modern era" there came new methods of diagnosis unknown to our learned forefathers, bringing in their turn new evidence from which the physician might forecast the future from knowledge of the present. "Those primordial notions," says Professor CHAUFFARD, when praising the insight of the early Greek philosophers and their skill in coördinating and interpreting details, "have lost none of their value, and if we have added much we have parted with nothing. To this day those objective data are amongst the things that no clinician has the right to neglect, and the general impression they suggest at the patient's bedside leads us to pretty much the same prognostic conclusions as of old." Here we see Professor CHAUFFARD'S vision of a real evolution in medicine, in which stage by stage what is useless can be shed while what is valuable is added. The technical methods of percussion and auscultation and the use of the thermometer (curiously enough, not mentioned by Professor CHAUFFARD) transformed clinical tactics, but in no way gave the physician any right whatever to dispense with the previous anxious seeking for general indications of disease, upon which reliance had to be placed before the stethoscope arrived. But when LAENNEC'S discovery had been made the next step forward followed naturally. The estimation by the new instrument of internal organic lesions had clearly to be corrected by identification in the cadaver of deeper physical changes, which during life should have produced alterations, exaggerations, or suppressions of different sounds heard on the surface. To the close observation of the early philosophers there was now added for the modern physician a weapon which went some way towards enabling him to interpret what he could feel and hear in terms of what could be seen at the necropsy, because knowledge of physiology now enabled him to understand what the main normal functions of the various organs were, and what their alterations would be when deviations from normal structure were present. This was an enormous step forward, but anatomical prognosis soon found its limitation as the knowledge of physiology spread, and as it became recognised that pathology was only physiology perverted. With this broader view it became clear—and it only so became as a result of a great deal of most industrious work which, having served its purpose, has fallen from regard—that if we desire to alter the usual course and sequence of a morbid state we must be acquainted with the usual functional procedures, so that we can estimate the extent of any disturbances present. The clinical physician, by knowledge of physiology and with a system of pathology founded on that knowledge, is now enabled to treat many conditions with much the same certainty that the surgeon can show when dealing with an obvious injury. He can recognise rapidly conditions previously thought to be isolated and independent diseases as consequent one upon the other, arising out of a common source, and forming sometimes what is pedantically known as a syndrome; and Professor CHAUFFARD has pointed out that this is the direction in which alike we may look for the progress and the simplification of medicine. Medical prognosis, while becoming a very complex matter when the consideration of multiple criteria has to be made, is yet tending towards simplicity, whenever we discover that numerous varying points of interest have a common association. And diagnosis becomes easier as the variety of clues to the condition is increased.

In the latter part of Professor CHAUFFARD'S address he discusses the conditions of what he calls remote prognosis, and approves of Professor CHARLES RICHET'S dictum that individual man has "a humoral personality which makes each different from other individuals," inasmuch as the various ingestions and intoxications of the system, as a whole, which may follow upon any deviation from normal physiology, probably leave some individual or personal trace. Here we

have a pregnant proof that our therapy advances, and that extended powers of prognosis, based on new methods and supported by an immensely improved armamentarium, will conduct us infallibly to a wider understanding of the far-reaching effects of disease, and enable us to make prognoses of increasing value. We appreciate now, and daily learn to appreciate it more highly, that any lesion at any time is in the course of evolution. The conditions caused by the lesion may either remain as serious as ever despite our interference, because so far we have been unable to arrest them; or they may have lost their seriousness for us because of our ability to treat the conditions. The progress of medicine is proved by the fact that the second division of those conditions—those for which improved treatment has been discovered—is multiplying regularly. The benefits of the antitoxin treatment of diphtheria, the results in antityphoid bacteriotherapy, the antirabic treatment of PASTEUR, Dr. LOUIS MARTIN'S surprising triumph in arresting sleeping sickness, and Professor LEONARD ROGERS'S success with amœbic dysentery are among the examples brought to our attention by Professor CHAUFFARD, and we could all add to the list considerably. With regard to those conditions which remain as irremediable as ever, the evolution of medicine is playing its part, mainly because it helps us to arrest the disease before these conditions are reached.

International Medical Congress: The Address in Surgery.

Professor HARVEY CUSHING'S eloquent Address in Surgery is from beginning to end a great defence of physiological and pathological experiment. He has not troubled to seek out new arguments to show that an essential part of our expanding strength in surgery and medicine alike is derived from laboratory methods, which methods constantly undergo revision at the hands of men who lose none of their acquaintance with the details of their handiwork because that handiwork is informed by the teaching of the physiologist and the chemist. Why should new arguments be sought when the old ones are so incontrovertible? But Professor CUSHING marshals those old arguments with clearness, simplicity, and humour; by new examples and new phrases he makes them move as well as live, and throughout his eloquent oration he demonstrates to his audience how broad is the view that he takes of the ministrations of Medicine, and how hopeful he is that the efficacy of these ministrations will increase step by step with the results of scientific research. To a certain extent the Address in Surgery is a pendant to the Address in Medicine, inasmuch as Professor CUSHING, like Professor CHAUFFARD, indicates that progress is now being rapidly made towards simplification. The result of the accumulation of wisdom is to be, predict both the learned orators, broader groupings of the difficulties to be dealt with in clinical and preventive medicine and surgery, and more general measures with which to combat the various ills as they arise. Rearrangement of subjects and realinement of objects—the discovery that many conditions can be estimated as one though differentiated in detail, and can be treated along lines generally similar though specially distinct—these are the things which in the near future will simplify surgery as much as medicine, and physiology is the great agent in the transformation. Every word of Professor CUSHING'S address shows how rapidly, under the perfection of physiological knowledge, the old barrier between pure medicine and pure surgery is being broken down, so that on the one hand internal medicine becomes "surgicalised" just as, on the other, military surgery has become largely a matter of preventive medicine.

LISTER, PASTEUR, HUXLEY, KOCH, VIRCHOW, and PAGET, the heroes of the International Medical Congress when it last met in London, are now all dead. Their names are recalled to us by Professor CUSHING and by Sir THOMAS BARLOW, who adds to them in his Presidential Address a long list of dead men worthy of memory. None of them are dead. So everlastingly alive are they, that the proceedings of the present Congress may quite fairly be said to be entirely based upon developments of their work in different directions. Their great achievements, like much of what has followed upon them, arose out of the enlightened use of chemical and physiological research, and all the thinking world is now prepared to allow this. Of recent time sentimental extravagance, as an obstacle with which to resist the advances of scientific medicine, has entirely failed, while the public in every part of the civilised world is learning to coöperate with the leaders of medicine and surgery in the prevention of disease, and the eradication of pathological defaults among men and animals. But undoubtedly there was a time when in this country a pause took place in our march forward, owing to the inability of the public to appreciate the need for exhaustive research; fortunately physiological performance was undelayed, and it is to the application of physiological teaching that we owe the promise of future simplicity held out by Professor CUSHING. When we say that the efforts of modern surgery are towards simplicity we mean simplicity of object and not of technique. The surgical conditions which required drastic interference in the days of our fathers and grandfathers entailed upon the operator qualities of the highest possible order. He had to carry about with him a perfect knowledge of regional anatomy. He had to apply this knowledge in an inconceivably short space of time and often in circumstances where revision of a preconceived opinion, or alteration of a procedure already commenced, must enormously increase the peril of the patient. We must never be found belittling the great equipment of the earlier surgeons of the nineteenth century. What they undertook was magnificent, and magnificently they did it. But physiology has given to their professional descendants opportunities and adjuvants which they did not possess. Gradually—and we need not repeat the oft-told story of the changes that followed upon the discovery of anæsthetics and of the principles of asepsis—our familiarity with the behaviour of living structures has revised our treatment of all disease, medical and surgical. Great principles have remained untouched, but much of the rest has undergone helpful modification. Even where major operations are performed, the operator has a choice of procedures only possible since physiology

showed the way, and a certainty of success that has only been achieved by elevating every operation into an experiment in biochemistry. Yet all this is making for simplicity. Our surgical therapy has a common inspiration. We do not work under a set of rules devised to meet separate conditions.

From consideration of this position, which carried a few stages further may merge surgery in medicine, Professor CUSHING draws the unexpected, but we believe none the less correct, deduction that in the near future the work of the general practitioner will be dignified. As medicine and surgery tend to become one by their numerous common methods of treatment, and by their extensive common resort to methods of prevention, the general practitioner will be doing his work upon the pattern of the work done by the leaders of his profession. And this will be the position enjoyed by those who actually do the medical work of the world in whatever quarter they do it, for medicine rapidly grows more cosmopolitan in its aims and standards. "We have come," says Sir THOMAS BARLOW in his Presidential Address, "into a goodly heritage, and that heritage is like a lofty and magnificent tableland of knowledge and efficiency. The gaps are being filled; we are no longer isolated, but are working side by side on adjacent areas which are inseparably connected."

The Unification of Medical Nomenclature.

INTERNATIONAL congresses, great as are their benefits, certainly bring into strong relief the obstacles interposed by national tongues to the rapid diffusion of knowledge. At the present International Medical Congress only a part of the audience will ever understand the speaker, no matter which of the official languages he may use. There are some who believe that an auxiliary international language, easy of acquirement by all, affords means of overcoming that difficulty, and it will certainly be worth a passing visit to the Esperanto meetings in the Geological Laboratory, Royal School of Mines, on August 8th and 11th to see what possibility there is of the manufactured tongue actually subserving that end. But there seems at present little tendency on the part of the medical profession at large to favour such a language. Almost as important a need, however, as that of understanding a speaker is the attainment in medical literature of an international technical vocabulary. As regards the records of the International Medical Congress, it is true, the medical press of the various countries will undoubtedly ensure that every communication of real importance will speedily find its way to the medical reader in his own language. Congresses, however, occur only once in a while, but the announcement of discoveries, of principles, of results, and so forth, is being put on record all the time in different parts of the world, and it is sometimes of the first utility that they also should receive early, wide, and accurate diffusion. Now, there are very many medical men who, while not possessing a knowledge of any foreign language adequate for conversation or ordinary reading, yet have such a familiarity with its more common words and modes of construction that they could easily make out the gist of many a communication, at least sufficiently to appraise its importance to themselves, if technical terms, substantive and adjectival—which constitute the main subjects and predicates of a medical thesis—were recognisable.

In all languages there are two sets of technical terms, one derived from the Latin or Greek, the other of purely domestic origin. In a paper, for instance, on Dislocations or Luxations, if the purely national terms, *déboîtement* (French), *slogatura* (Italian), *descoyuntamiento* (Spanish), *Verrenkung* or *Ausrenkung* (German) are used the essence of the matter may have to be "dug out" with toil and difficulty by one possessing a rudimentary knowledge of the respective tongues; whereas if the French writer had used *luxation* or *dislocation*, the Italian *lussazione*, or *dislocazione* the Spaniard *luxación* or *dislocación*, or the German *luxation*, a very meagre vocabulary of the more common words would have sufficed for any reader to grasp the sense without imposing any extra difficulties on the author's compatriots. Such a unification of the technical nouns and of the adjectives derived therefrom, so that they might be recognisable at sight by all medical men of whatever nationality, is therefore clearly desirable. With this end in view, at the last meeting of the International Association of the Medical Press, held concurrently with the Sixteenth International Medical Congress at Budapest, the question of the unification of medical nomenclature received serious attention and the establishment of an international commission for the purpose was mooted. The subject has been again brought forward at the International Association of the Medical Press this week in an admirable paper by M. RAOUL BLONDEL, secretary general of the association, which appears elsewhere in these columns. M. BLONDEL'S suggestions are simple, and seem likely to prove effective. What M. BLONDEL aims to do is to minimise the confusion that has been introduced in the past by the multiplicity of synonyms, by national medical terms, by eponyms, and by badly constructed words which do not intrinsically convey the meaning intended, preserving at the same time a judicious conservatism to avoid causing undue disturbance; and to obviate further confusion in the future by an authoritative supervision over all new word formations. To effect this he would have an international committee decide as to those terms which should be accepted as internationally standard, whether now existing or to be coined in the future.

The International Association of the Medical Press, while it could not of course prevent individual writers from using or coining other terms, ought to be able to ensure that the international standard words should be appended in parentheses in all the leading medical journals. Their use would thus gradually extend and the publishers of medical books would in all probability fall in with the practice in their own interests in course of time. M. BLONDEL suggests, therefore, the substitution in medical writings for all purely national names of diseases, symptoms, methods of treatment, physical and chemical reactions, and so forth, of the Latin or Greek terms themselves or of national derivatives therefrom, thus rendering all technical terms essentially the same in all languages;

that they should always be printed in Roman characters; that they should be correctly formed in accordance with well-known philological principles of word composition, the constituent parts of the compound word being logically disposed; that hybrid words and meaningless eponymous terms should be dropped; and that terms whose similarity to others is liable to cause confusion should be avoided. To these suggestions we would add that new words should not be adopted when there already exists in the classical Greek and Latin writers a word having the required signification. What need, for instance, is there for the weird combination, "chthonophagia," or even the more accepted "geophagia," to signify earth eating, when HIPPOCRATES has already given us geotragia? The carrying out of these principles demands, it seems to us, that the commission should contain not only medical men of learning, but also philologists, and, above all, scholars familiar with the ancient Greek medical writings in the original tongue; if the qualities are combined in one person so much the better. And this suggests the further reflection that there are among the Greeks to-day men who combine all these qualities, who are at the same time medical men, scientific philologists who have inherited the genius of the Greek language, and scholarly students of the ancient Greek writers. Their assistance has been long and incomprehensibly neglected. Is it too much to hope that this will be remedied by those to whom further consideration of Dr. BLONDEL'S paper has been delegated?

Annotations.

"Ne quid nimis."

THE NEED FOR COÖRDINATION OF ANTI-TUBERCULOSIS MEASURES.

AT the fifth annual Conference of the National Association for the Prevention of Consumption and other Forms of Tuberculosis, held on August 4th and 5th, Sir R. W. Philip delivered an opening address on the Need for the Coördination of Antituberculosis Measures. In discussing the infective nature of tuberculosis he laid stress on the facts that the infection spreads among a people because of their social conditions, and that the factors which foster the development of the infecting organism are created and maintained by the people themselves. He pointed out that if the course of tuberculosis were definite and uniform like that of most other infective processes, and if the majority of cases of tuberculosis followed such a course, the effective handling of tuberculosis would be an easy affair. It would then be simply a matter, as in the ordinary fevers, of diagnosing the condition and sending the patient to hospital for a given period, and there it would end. But where this rule-of-thumb attitude prevails in tuberculosis it threatens to seriously interfere with the general adoption of sound and sufficient measures. The recognition of certain features of tuberculosis must, we know, be the prelude to any sound programme of prevention and treatment. It must be fully appreciated that the disease is insidious, tenacious, and illusive, and that the professional attitude must be one of constant watchfulness and untiring care. It must be insisted on that when once diagnosed and taken in hand the tuberculous case ought not to be let slip until the patient is better or the disease has triumphed. The tuberculosis dispensary was designed to effect this, and its methods were entirely different from those of the ordinary out-patient department. The aim of the institution is that not a single case of tuberculosis should occur unobserved or remain uncared for in the community. One of the most valuable functions of the dispensary is to trace the patient to his home, to investigate faulty environment, and to search out tuberculous disease among the other members of the household. For these purposes "house visitors" are necessary, and therefore if in the future the large hospitals are to have tuberculosis dispensaries attached to them, arrangements for visiting the patients at their homes will be needed. The problem of dealing with tuberculosis is intimately bound up with the housing of the working classes, and unless the patients' homes are scrutinised and the necessary hygienic measures carried out but little influence will be found on the incidence of the disease. Sir R. W. Philip pleads for a central administration from which the necessary treatment of patients can be recommended—domiciliary, dispensary, hospital, or sanatorium. The principal officers of such an organisation must be chosen from those who have had an extensive practical experience of tuberculosis derived from many years of observation.

THE RAT, A SANITARY MENACE AND AN ECONOMICAL BURDEN.

AT the present day few persons who have looked into the subject will be found to deny the danger associated with the rat in connexion with the propagation of bubonic plague, and possibly of other diseases. Moreover, most individuals have a strong personal feeling of repugnance to this detested rodent, whose presence in any dwelling gives rise at once to alarm and disgust. It is freely recognised on all sides that the rat consumes or destroys a considerable amount of the farmers' crops, the shopkeepers' goods, the cargoes on board ships, as well as the householders' foodstuffs. It is obvious, therefore, that attempts to exterminate this dangerous and wasteful animal are extremely desirable for many reasons. In this connexion we draw attention to a short article by Passed Assistant Surgeon R. H. Creel, of the United States Public Health Service, published in our American contemporary, *Public Health Reports*, for July 4th, in which this officer denounces the rat in strong terms as a sanitary menace to man and as an economic burden to the country. Dr. Creel has had a wide experience of this rodent in many places where he has supervised the carrying out of anti-rat measures in the presence of plague or of its threatened appearance. He reminds us that the female rat begins to reproduce its kind at the early age of three months, and that an adult animal will give birth during the year to six litters, each of which comprises from 6 to 12 young ones. He also makes an estimate of the number of rats living at present in the United States, basing his calculations on a series of observations made in various localities. He computes the rat population of American cities as at the least equalling that of man, and he asserts that in the country districts the human population is far outnumbered by that of the rat. Dr. Creel also calculates that the upkeep of each rodent costs about half a cent daily, and he arrives at the conclusion that in the United States no less a sum than 167 million dollars is sacrificed annually by the depredations of this loathsome pest. The rat, like the domestic fly, seems to have no redeeming points, and apparently does nothing for man to merit from him its upkeep; on the contrary, from the human standpoint the destruction of this animal is greatly

to be desired not only for sanitary but also for economic reasons. Unfortunately, the extermination of the rat is a far more difficult problem than that of the domestic fly. Though each householder, shopkeeper, and shipowner can perform his own share of the necessary work, united action by local and central authorities is also essential if the numbers of the malignant rat are to be perceptibly reduced, total extermination being apparently impossible under present conditions. The rendering of dwellings, stores, and wharves reasonably rat-proof is likewise indispensable. If, therefore, the public authorities are not impelled to move in this direction on medical grounds alone, there is a very strong incentive to immediate action strictly upon economic considerations, which, perhaps, are more likely to appeal to the sympathies of the public all the world over.

MAN AND HIS FORERUNNERS.

IT was one of the most heartfelt pleadings uttered by the late Professor Dwight, of Harvard, that we should stop from time to time in the march of science; pause for however brief a spell, just to look back to see where our ideas had come from, and to look ahead to see where they were leading us. He made this charge against the men who were labouring at the problems of evolution, that once the idea had started making progress not one of them paused to make a reasoned survey of the premises, or considered the logical outcome of pushing those ideas to a conclusion and presenting the final product to the world. There is no study in which this stock-taking process is more necessary than that which concerns itself with the geological story of man. Every fresh find, whether of actual bones or objects of culture, dictates a pause; it is not enough to attempt to fit the new material into some gap in a preconceived scheme; for the material must be judged on its own merits and the scheme, if necessary, be recast for its reception. Within the last two years our knowledge of the early remains of man has been admirably summarised in three separate publications, each marked with its own distinctive individuality, by Keith, Sollas, and Duckworth. These excellent *résumés* of the story of ancient man were all issued before the discovery of the remains of the individual, now famous as "the Piltdown skull," was made known to the public; but recently there has appeared an English translation of the work of Professor H. v. Buttel-Reepen, which incorporates this Sussex find among the forerunners of modern man.[1] We have therefore an entirely up-to-date review of the position to which the study of the early human forms has attained—a position from which it is possible to take some survey of the past and of the future. It is curious to look back only 50 years in the story of the study of the history of man. It is less than 50 years ago that Huxley was seriously concerned in a vigorous and weighty reply to Professor Mayer, of Bonn, and it is almost startling to-day to think that this fighting effort was made in order to refute Professor Mayer's assertion that the celebrated Neandertal skull had belonged to no one more interesting than "a rickety Mongolian Cossack belonging to one of the hordes driven by Russia, through Germany, into France in 1814." The exactly similar debate that was waged around the Trinil find of Dubois is a more familiar subject, and in England Cunningham and Keith took up the cudgels in defence of the antiquity and primitive characters of the Java man. Each fresh discovery has had pitched battle waged around it; and from some the smoke of battle has not yet cleared away. It is healthy and proper that this atmosphere of doubt and debate should be the one into which such ancient relics are born, for from the conflict of the views of the extremists the mean, which probably lies nearest to the truth, is apt to be chosen and accepted as currency in the end. So many debates have been won and lost that it will probably strike the attentive reader of more recent work that there may, in the near future, be danger of a lack of healthy opposition to the acceptance of new finds. From the controversies of the past Neandertal man and Pithecanthropus have emerged as orthodox and accepted axioms, and now is added Eoanthropus dawsoni. Eoanthropus dawsoni has not had his baptism of fire. It must be remembered that while Huxley was attacking Mayer, of Bonn, he was equally engaged in refuting the views of Professor King, for if the Cossack idea of the one struck Huxley as being too homely, the assertion of the other that the skull was "not only specifically but generically distinct from man" was far too revolutionary for him. May not history repeat itself? Professor Buttel-Reepen says of the Piltdown skull that it "has been placed by Woodward not only in a new species, but—an extreme step—in a new genus, and has been given the name Eoanthropus dawsoni." The Piltdown individual has had a peculiarly fortunate genesis, for he has been ushered into the world under a geological ægis so distinguished that he takes rank at once as a representative of late Pliocene or early Pleistocene times. But it seems not impossible that the geological distinction of his rebirth may be in danger of permitting him to pass to his place without running the gauntlet of battle waged around the earlier finds. He has come to his place in the lay mind, he has found his way into printed books and into tables and schemes; his relationship with other early types is guessed at, presumed, or asserted; and yet, anthropologically speaking, his battle is unfought. As a geological relic he has taken permanent and proper place, but as an anthropological type he remains unchastened by criticism. He is late Pliocene or early Pleistocene, but is he Eoanthropus—a genus distinct from Homo? It is for questions such as these that the pause and the stock-taking are required.

[1] Man and His Forerunners. By H. v. Buttel-Reepen. Authorised Translation by A. G. Thacker, A.R.C.S. Lond. With a frontispiece, 70 figures in the text, and three tables. London: Longmans, Green, and Co. 1913. Pp. 96. Price 2s. 6d. net.

HERPES ZOSTER SIMULATING DISEASE WITHIN THE ABDOMEN.

THE eruption of herpes zoster may be preceded for some days by pain, and then a wrong diagnosis may easily be made. In the *Journal of the American Medical Association* of May 31st Dr. L. Litchfield has reported two cases in which intra-abdominal disease was suggested. In the first, a widow, aged 45 years, suffered from severe pains over the course of the left ureter, with exacerbations at night which kept her awake. The pain was not influenced by meals, defæcation, or micturition. On deep pressure tenderness was elicited over the left ureter and nowhere else. Owing to the apparent urgency of the case radiograms were at once taken. On the next day the eruption of herpes zoster appeared in the site of the pain. In the second case Dr. Litchfield's opinion as to the advisability of immediate operation was sought by colleagues. On Oct. 2nd, 1912, he saw a woman aged 70 years. She was taken ill on Sept. 25th with severe pain across the upper abdomen which kept her awake most of the night. On the following day the pain was less, but at night it again became severe. On Sept. 26th and 27th the pain was accompanied by abdominal distension and she vomited. On the 29th she was somnolent; she could be aroused, but immediately went to sleep again. The bowels were kept open from the beginning by calomel and other means. On Oct. 1st gall-stones were diagnosed and immediate operation was recommended by a surgeon. On the 2nd the abdomen was much distended. The pain had not been severe since Sept. 28th. There was a well-marked eruption of herpes zoster in the right hypochondriac and subscapular regions. At first the rash was

attributed to mustard plasters and turpentine stupes which had been used. Only when characteristic vesicles were discovered in the same segment posteriorly was the nature of the case recognised. Close inspection of the anterior patches showed the characteristic grouped vesicles of herpes zoster. Marinacci has reported a case of herpes zoster in which intense pain across the lower abdomen with marked tenderness in the hypogastrium and both iliac fossæ, fever, small frequent pulse, persistent vomiting, hiccough, and drawn face suggested peritonitis. Dr. Henry Head has mentioned the fact that cases of herpes zoster in the pre-eruptive stage have been admitted to London hospitals as examples of pleurisy and pneumonia.

ACUTE UNILATERAL NEPHRITIS.

AN interesting account of the condition of acute unilateral nephritis with the report of a case is published in the *Archives of Internal Medicine* of June 15th, by Dr. David Riesman and Dr. George P. Müller, of Philadelphia. The patient was a woman, aged 22 years, who was seized in the early morning with sudden pain in the left loin after vomiting. The temperature rose to 102° F. and the pulse to 120. There was rigidity of the lumbar muscles, with tenderness in the costo-vertebral angle. The leucocytes were 7000 per cubic millimetre on the first day, but two days later had risen to 13,000. The urine was highly coloured, contained albumin, and on microscopical examination showed hyaline and granular casts, but no pus cells. The pain and fever gradually subsided, but the rigidity persisted. About a week after the onset of the attack the patient insisted on getting out of bed, after which her symptoms recurred, and pus appeared in the urine. The pain was in the left loin and left hypochondrium, radiating at times down to the groin, at others to the back. There was tenderness to pressure at the costo-vertebral angle extending forwards to the crest of the ilium. There was rigidity of the muscles in the loin, with some fulness on palpation, but no tumour could be felt. At this time examination of the urine showed erythrocytes and pus cells in addition to the albumin and casts. Unilateral infection of the kidney was diagnosed. Hot fomentations were applied to the kidney region, and urotropine, abundant water to drink, liquid diet, and purgation were prescribed. For about ten days the patient varied, sometimes improving, but eventually relapsing. Her temperature continued at about 102°, and her general appearance indicated increasing sepsis, so that an operation was deemed advisable. The symptoms were throughout unilateral and localised in the region of the left kidney. At the operation the perinephric fat was found to be infiltrated and inflamed, and on further exploration an abscess was opened containing 3 or 4 ounces of thick pus. On exposing the kidney it was found to be the seat of a diffuse suppurative process. Nephrectomy was performed and the patient slowly recovered. She was discharged 44 days after admission to the hospital with a small sinus which closed shortly afterwards. About six weeks later a swelling of the right submaxillary salivary gland developed and pus was found to exude from Wharton's duct. Examination by X rays showed the presence of a calculus. The gland was removed under ether anæsthesia. Subsequently the patient became pregnant and miscarriage occurred. About 10 months after the original attack she was passing an average of 40 ounces of urine in 24 hours, the urine being normal in character. Examination of the pus in the kidney at the time of operation and later of the discharge from the wound showed the presence of micrococcus pyogenes aureus. Dr. Riesman and Dr. Müller, in discussing the origin of unilateral nephritis, maintain that although infection may occur by an ascending invasion from the bladder or by lymphatic infection from the intestinal tract or from the lower urinary organs, the common origin is by hæmatogenous infection. They believe that most cases of pyelonephritis are probably unilateral in the beginning. They also state that the great majority of cases of unilateral nephritis have occurred in women, and the explanation they offer is that it is due to the frequency of displacement of the right kidney and the greater tendency to intestinal stasis in that sex. Following Brewer, they describe three types of unilateral nephritis, a severe one in which the local symptoms are obscured by an intense toxæmia, and an intermediate type with severe initial symptoms but without grave toxæmia, going on, however, to renal abscess, perinephritic abscess, pyelonephritis or pyonephrosis unless recognised and treated; the third form is of mild character, with tenderness over the costo-vertebral angle as the only symptom, frequently mistaken for subacute appendicitis or cholecystitis. To this they add a fourth type in which the chief and perhaps the only symptom is hæmaturia. The treatment recommended is that the acute form should be operated upon as soon as the diagnosis can be made, nephrectomy or nephrotomy being performed. In mild cases rest in bed, milk diet, urinary antiseptics, purgatives, and abundance of water usually suffice to bring about recovery.

THE ENDOWMENT OF MEDICAL RESEARCH.

WE are not without examples in this country of magnificent generosity for philanthropic purposes, though so far they have mainly been of one pattern. The benefits derived from increasing knowledge of pathology are constantly placed at the disposal of our sick poor by charitable rich. This is the side of philanthropic endeavour that most insistently thrusts itself upon the practical man. We may refer, for example, to the munificence of the late Mr. George Herring, who, besides large donations during life to hospitals and the Hospital Sunday Fund, to the Salvation Army's philanthropic work, and to the establishment and endowment of various charitable institutions, bequeathed at his death in 1906 the residue of his vast estate to the Metropolitan Hospital Sunday Fund. But before philanthropic endeavour can effectively be applied to the relief of suffering knowledge must first be gained, and the work of those who devote themselves to seeking that knowledge and establishing therefrom the principles of action whereby such knowledge can effectively be applied must be adequately supported. The endowment of research, therefore, serves humanity, as it were, in geometrical progression, for as achievement is added to achievement in knowledge methods of application become multiplied many fold. Suppose that an absolute preventive of and cure for cancer were discovered to-morrow, can we doubt that money in abundance would be forthcoming to help to distribute its benefits as widely as possible? Everyone could see the practical utility of that. But it is a far harder matter to get money to search for such a cure. The reason, doubtless, is because the cure once found, its application is speedily fruitful of obvious results—there is a sure return for the money expended—while money laid out in research offers merely a possibility of definite results being derived therefrom in the uncertain future. Public spirited men in America are more alive to the pregnant possibilities of research from the practical point of view, and are more ready to devote money to its prosecution, secure in the conviction that sooner or later it will fructify to the good of suffering humanity. Recently the American Ambassador, Dr. Hines Page, startled his English hearers at the dinner of the Anglo-Saxon Club by the announcement that the sum of 100 million dollars

had been anonymously given to a newly formed International Health Commission, which is to be endowed with large powers in regard to any measures tending to the preservation of the public health, the prevention of sickness, and the reduction of the rate of mortality, particularly in relation to tropical disease. We are informed that the new foundation is not the gift of any one colossally rich man, but of a number of wealthy men in the United States. If this be so, we may be certain that the capital fund will be so invested that it will bring in an income, as an annual subvention of medical science, of about £1,000,000 a year, and with this sum great things should be possible for the advantage of the human race.

MASSAGE ESTABLISHMENTS AND PUBLIC MORALITY.

THE Public Control Committee of the London County Council has reported that the Commissioner of Police for the metropolis has called its attention to the large number of advertisements relating to establishments where massage, manicure, and electric treatment were undertaken. The Commissioner stated that the police had reason to believe that many of these places were in fact nothing more than disorderly houses. The police have no power of entry, and have great difficulty in obtaining evidence. The Commissioner urged the Council to obtain powers of systematic inspection and supervision. The Home Secretary was so impressed with the urgency of the question that he had intimated his willingness to secure, if possible, amendments to the present General Powers Bill of the Council and save a year's delay. The Council passed a resolution approving of immediate steps being taken in Parliament empowering the Council either to license or to register establishments of the kind referred to, and to provide for their inspection.

RADIUM THERAPY IN MYELOID LEUKÆMIA.

AT a meeting of the Société Médicale des Hôpitaux of Paris on July 11th M. Louis Rénon, M. Degrais, and M. Desbouis reported five cases of myeloid leukæmia, and showed two of the patients, in whom remarkable benefit had been derived from radium therapy. Two of the patients had been treated by X rays, one by X rays and benzol, and one by benzol, all without benefit. The following is an example. A rather thin, pale woman, aged 27 years, was seen on April 23rd, 1913. The lips and conjunctivæ were completely white. The abdomen was so enlarged as to be comparable with that of a woman at term. An enormous smooth, hard tumour filled the abdomen, extending from the costal border to the pubes. In its right border was a well-marked notch opposite the right antero-superior spine of the ilium. There were no enlarged lymphatic glands. The patient had for a long time suffered from polyuria, the amount of urine in the 24 hours ranging from 2 to 3 litres. The temperature ranged from 98·6° F. in the morning to 100·4° in the evening. Blood examination showed 3,300,000 red corpuscles and 260,000 white per cubic millimetre. A differential count gave 3 per cent. of large and medium mononuclears, 20 per cent. of myelocytes, 70 per cent. of polynuclear neutrophiles, 3 per cent. of mononuclear eosinophiles, 2 per cent. of polynuclear eosinophiles, and 2 per cent. of nucleated red corpuscles. On May 18th 30 centigrammes of radium sulphate, spread over an area of 600 square centimetres and filtered through 2 millimetres of lead, were applied over the spleen. On May 24th there was no change in the size of the spleen or in the blood formula. On June 7th there was a considerable diminution in the number of white corpuscles, which had fallen to 56,000. A second application of radium was made, and on June 14th, when the number of white corpuscles had fallen to 19,000, the myelocytes had disappeared and the spleen was a little smaller. On June 22nd the spleen was rapidly diminishing and a third application was made. On July 1st the spleen did not extend beyond the middle line or below the level of the umbilicus. On July 11th the red corpuscles numbered 3,700,000, the white 7000, and the spleen was still diminishing. This case and the other ones showed that radium has a rapid and powerful effect in myeloid leukæmia when applied to the spleen for 24 hours in massive doses (30 to 33 centigrammes of the sulphate), spread over a surface of 500 to 600 square centimetres. The effect of one application is prolonged for 8 to 25 days. Spleens filling the entire abdomen recover their normal size after three to five applications. The number of leucocytes may fall in 8 to 10 days from 320,000 to 70,000. The myelocytes disappear. After three or four applications the number of white corpuscles becomes normal or even less. The number of the red corpuscles is increased. After four to six applications the patient is apparently cured; but after an interval of two to 18 months from cessation of the treatment the signs of myeloid leukæmia reappear. The number of white corpuscles increases, the myelocytes return to the blood, and the spleen enlarges. If after a long interval radium treatment is again begun the effect is not so great. The fall in the number of leucocytes is less, and diminution of the spleen takes a longer time. In the end radium loses all action and the patient dies after a variable interval from beginning the treatment; sometimes this is more than two years. It is noteworthy that usually no effect is noticed from an application of radium for a week. About eight to 15 days after the application diminution in the number of leucocytes becomes manifest. This action is increased rapidly and regularly by each successive application. The action on the blood is more rapid than that on the spleen. After each application diarrhœa, lasting one to three days, is produced. M. Rénon, M. Degrais, and M. Desbouis suggest that possibly a larger dose of radium or the regular continuation of the treatment might prevent relapses. Although radium and X rays appear to have a similar therapeutic action in the disease, different physical factors may be involved. Therefore when one of these fails it may be well to try the other or even to alternate or combine the two.

FIBROMATOSIS OF THE STOMACH.

THE affection variously known as cirrhosis or fibroid induration of the stomach or linitis plastica is one of which little has hitherto been known for certain, but which is of considerable clinical importance in that it may readily be mistaken for cancer. Doubt has indeed existed as to whether it was in reality an innocent formation or was a form of atrophic scirrhus, and this doubt remains unresolved in the case of the generalised form of the affection which has been described as "leather-bottle stomach." The localised form of the disease has recently been carefully investigated by Professor Alexis Thomson and Mr. James M. Graham at Edinburgh, and the results of their researches are published in the July issue of the *Edinburgh Medical Journal*. Fourteen cases of fibromatosis of the stomach were available for this examination, and comparison was made with 35 cases of cancer and one of tuberculosis of the organ. The localised form of fibromatosis nearly always begins in the pyloric portion of the stomach, which becomes rigid and cartilaginous. Its wall is much thickened and its lumen reduced. The neighbouring glands are usually enlarged. Of nine cases uncomplicated with cancer, seven showed a punched-out ulcer in the affected region, and the other two were the seat of superficial erosion of the mucous

membrane. This may in places present an irregular surface with polypoid excrescences, the condition being sometimes described as polyposis of the stomach. The chief seat of the new fibroid formation is the submucous layer. Here the fibrous overgrowth is easily distinguishable from ordinary scar-tissue in that it infiltrates without replacing the tissues both in this layer and in the muscular coat, the fibres of which are separated or segmented; they may also show some hypertrophy as the result of obstruction of the pylorus. Microscopically the fibrous bundles are found to run in all directions as in a neuro-fibroma. There are numerous well-formed blood-vessels, and collections of lymphocytes are found here and there. In five cases of this series cancer was associated with the fibromatosis, the sequence apparently being chronic ulcer, fibrosis, and subsequent development of epithelial new growth in the edge of the ulcer. The existence of cancerous change may be only discoverable on careful and prolonged microscopical examination. There is no evidence to suggest that the formation of fibrous tissue is due to syphilis or tuberculosis, the cause of the condition being presumably the entrance of some toxin or virus through the breach of surface formed by the ulcer, and the lymphatics of the part being in all probability the path of diffusion of the irritant. The disease seems to present a close resemblance to the peculiar overgrowth of fibrous tissue in the skin known as cheloid, but the authors do not discuss this analogy. The freedom of cases of duodenal ulceration from liability to this fibromatous formation and also from the development of cancer is remarkable. Distinction of fibromatosis from cancer at the time of operation is often difficult or impossible, as only prolonged microscopical investigation can prove the absence of malignant changes. The discovery of a chronic ulcer, not apparently cancerous, would warrant regarding a case as possibly fibromatous, and would, therefore, justify resection of a portion only of the viscus instead of total removal. If this be impossible, gastro-enterostomy or jejunostomy may give good results.

THE ISTITUTO MARAGLIANO.

IT redounds greatly to the credit of our Italian colleagues that there exists at Genoa an excellent institution founded by Professor E. Maragliano for the study and treatment of tuberculosis and other infectious diseases. The Istituto Maragliano, as it is called, publishes annals of which the first number of the seventh volume has lately been issued,[1] and contains five communications of more than ordinary interest. Dr. G. Costantini contributes a paper on the value of Much's method of staining tubercle bacilli with a view to determine the correctness of the latter's assertion that besides the well-known Koch's bacillus, which can be stained by Ziehl's method, there is another form hitherto unrecognised, but which is virulent, is not stained in the same way, and has different characteristics. His observations lead him to the conclusion that Much's granulations represent an attenuated form of the tubercle bacillus which may develop virulency and give rise to the usual acid-fast-rod-shaped forms. From a practical point of view, Much's method is useful when the ordinary method of staining gives negative results, but there is still strong reason to suspect a tuberculous infection. The same observer conducted a series of experiments to ascertain the ultimate fate of tubercle bacilli in the blood-vessels, whether they undergo such dissolution and destruction as would point to the existence of a true bacteriolytic action. Professor Romanelli reports 16 cases treated by rectal injections of antituberculous bacteriolytic serum; these injections were well tolerated locally, gave rise to no increase of temperature in apyretic cases, and greatly increased the specific defensive material in the blood of the patients. Dr. Sivori and his assistants give a brief note on the researches they are now making with regard to the presence of antigens and antibodies in tuberculous sputum, and another on the result of their investigations as to the different behaviour shown by diphtheritic toxin towards various kinds of antidiphtheritic serum.

[1] Genoa: Piazza del Popolo 11.

BODY METABOLISM IN A SUBMARINE.

IN the *Annali di Medicina Navale e Coloniale*, Vol. I., Fasc. IV., 1913, we find an interesting record of experiments on body metabolism during a period of 24 hours' immersion in a submarine by Dr. C. M. Belli and Dr. G. Olivi of the Italian navy. The conclusions may be thus summarised: 1. Slight diminution of body weight due to increased elimination of water through the skin and lungs. 2. Appetite and digestive functions unaltered. 3. Nourishment was taken in normal proportions. 4. Assimilation and thermic equilibrium showed slight variations in one subject, remained unchanged in the second. 5. The N equilibrium showed no appreciable variation from the respiration of confined air. 6. The C equilibrium was unmodified. 7. The mineral equilibrium showed a slight loss to the body which would scarcely be attributed to the physico-chemical state of the atmosphere in the immersed submarine.

PLAGUE PROTECTION AND RAT CATCHING AT PALERMO.

PALERMO was threatened in 1907–08 with plague from Tunis. Dr. Arcangelo Ilvento, a professor in the University and port medical officer, has described in the *Archiv für Schiffs- und Tropen-Hygiene* how he endeavoured to minimise the risk. The great question was, he saw, the destruction of rats, for, as he truly says, the other animals which carry the infection of plague, as marmots, camels, and rabbits, are but rarely found on board ships. The methods of rat destruction are, as he states them, mineral poisons in food put out for them, bacterial virus, poisonous gases, cats, ratcatchers, and traps, and though he mentions the excellent success obtained by ratcatchers in England, he put his chief reliance on traps. He arranges a wire trap so that the rat falls through a trap-door which resets itself automatically. He has caught 23 rats at a time in such a trap. The bait should be carefully chosen, something attractive and different from the food generally available for rats in the vicinity. In a grain store he uses meat or fish, and in dry Tunis water has been used with success. A female decoy is the best bait for male rats. The firm of Panchesi at Venice provided Professor Ilvento with a most useful sticky material like birdlime. He places this in a 2-inch deep layer on boards 18 inches long, 9 inches wide, with the bait in the centre. The rat, covered with this slime, gets away with difficulty, all sorts of dust adhering to it, but the fleas are thus imprisoned, a most important point, when the rat dies. In Palermo 1600 rats have been caught in four years, of which 53 per cent. were M. rattus, 46 per cent. M. decumanus, the remaining 1 per cent. M. alexandrinus; 60 per cent. were males; of the 40 per cent. females a quarter were with young. The commonest flea at Palermo was Læmopsylla cheopis; it lives on the neck of the rat, and when plague-infected is believed to be the origin of cervical buboes. Ceratophyllus fasciatus lives on the body and appears to cause inguinal buboes. Only 122 fleas were found on 527 rats examined to that end. This suggestive work is clearly capable of extension, when verification of some of the apparent results would follow.

ÉTUDE PRÉPARATOIRE À UN PROJET DE RÉVISION INTERNATIONALE DE LA TERMINOLOGIE MÉDICALE *

PAR LE DR RAOUL BLONDEL

SECRÉTAIRE GÉNÉRAL DE L'ASSOCIATION INTERNATIONALE DE LA PRESSE MÉDICALE

Le IVe Congrès international de la presse médicale à Budapest, en Août 1909, avait inscrit à l'ordre du jour de ses travaux, la question de la réforme de la terminologie médicale.

Après un court débat, qui mit surtout en relief à la fois l'utilité et les difficultés de cette réforme, en même temps que la nécessité de tenir compte, en pareille matière, de certains faits acquis, et particulièrement des droits de l'histoire, l'assemblée décida que le Congrès suivant, à Londres, aborderait cette étude, en s'entourant des documents qui pourraient être rassemblés d'ici là.

Depuis, les diverses Associations nationales de presse médicale ont été invitées individuellement à procéder, chacune dans son domaine, à ce travail préparatoire. L'idée d'une Commission nationale réunissant des représentants de la presse médicale, des savants et écrivains médicaux spécialement compétents, et enfin des membres des Sociétés d'histoire de la médecine, là où ces Sociétés existaient, fut suggérée à chacune de ces Associations.

Des réponses reçues au Secrétariat général de l'Association internationale, il semble résulter — et tel est le point de vue exprimé en particulier par l'Association de la presse médicale de langue allemande — que, même pour ces travaux préparatoires à exécuter dans chaque pays, il serait utile qu'une étude préliminaire du sujet fût entreprise, pour servir de base aux recherches locales, leur donner de l'unité et les orienter selon un plan commun.

C'est cette étude préliminaire qui forme l'objet du présent rapport.

* * * * *

Un premier point est à mettre hors de doute.

De plus en plus, à notre époque, la science médicale, comme toutes les autres — mais peut-être encore plus que les autres, en raison de ce que ses progrès intéressent tout être humain d'une façon immédiate — la science médicale est devenue le patrimoine commun de l'humanité tout entière. En tous les points du monde civilisé, dans tous les hôpitaux, dans tous les laboratoires qu'on rencontre aujourd'hui dans le monde entier, elle s'élabore chaque jour par les efforts isolés mais concordants d'une foule de travailleurs, fouillant l'inconnu et apportant leur pierre à l'édification de l'œuvre commune. Toutes les nations, toutes les races, tous les idiomes lui fournissent journellement leur contribution.

Les journaux et les bulletins des Sociétés savantes, plus encore que les livres, parce qu'ils sont publiés plus rapidement et atteignent plus sûrement tous les intéressés, enrégistrent sans cesse cette riche moisson de nouvelles, les soumettent à la critique et au contrôle de tous, permettant ainsi de décider, au milieu de l'apport quotidien d'essais, d'expériences, de faits particuliers et d'hypothèses, quelles sont les notions qu'il est possible d'accepter comme acquises — sous réserve de l'avenir.

Il est dès lors évident que l'information scientifique joue ici un rôle de premier plan, en reliant entre eux tous les travailleurs dispersés à la surface du globe. La presse médicale a acquis, à notre époque, un développement considérable, prenant le même essor et utilisant les mêmes ressources que la presse quotidienne. Grâce à elle, les nouvelles scientifiques sont rapidement transmises aujourd'hui, d'un point du globe à l'autre. Les journaux politiques, usant du télégraphe et du téléphone, lui prêtent même souvent, en ceci, le concours un peu indiscret d'une publicité manquant parfois de clairvoyance et de jugement sinon de désintéressement.

Ces excès même ne font que souligner l'importance que l'on attache, dans tous les milieux, en vue d'un meilleur rendement de l'effort commun, à la transmission aussi rapide que possible, à chaque travailleur, des résultats obtenus par autrui, dans la voie où il cherche lui-même.

L'homme de science est donc astreint aujourd'hui à lire beaucoup, et à se tenir exactement au courant de la production scientifique de tous les pays, au moins dans le domaine qui l'occupe. Tout centre de travail, Faculté, institut, laboratoire même, est obligé de posséder cette documentation sans cesse croissante, faute de laquelle le contact est perdu avec le reste du monde savant.

Or, c'est ici qu'apparaît une difficulté considérable, la diversité du langage scientifique.

Elle est inévitable. Tous nos efforts ne pourront que l'amoindrir sans la faire disparaître. Il n'y a que trois siècles, elle n'existait pas. Le latin était la langue universelle des savants, leur facilitant ainsi singulièrement la connaissance exacte des travaux les uns des autres. Une telle langue universelle rendrait des services bien plus marqués encore aujourd'hui, la production scientifique étant devenue infiniment plus considérable et chaque savant ayant l'orgueil parfaitement légitime, en employant la langue nationale, d'enrichir le patrimoine de son pays. Il n'en est pas moins vrai que, pour prendre connaissance de ce qui l'intéresse, il lui faudrait aujourd'hui posséder non plus une seule langue universelle, acceptée par tous comme le fut le latin, non plus même une ou deux des langues les plus répandues, français, anglais, allemand, italien, espagnol, mais tous les idiomes dans lesquels la science s'enrégistre aujourd'hui, c'est-à-dire ceux de tous les pays où l'on travaille, et l'avenir ne fera qu'en ajouter de nouveaux.

Énoncer cette proposition suffit à souligner l'impossibilité de sa réalisation.

La chimère d'une langue universelle, même à titre auxiliaire, est du nombre de ces choses que tout le monde considère comme souhaitables, mais dont la réalisation nous apparaît pratiquement comme tellement éloignée qu'il est peut-être prudent de nous accommoder, en attendant, quelque solution provisoire. En tout cas, ce rôle ne sera pas dévolu, bien certainement, à une langue morte. Appartiendra-t-il à une langue artificielle créée pour la circonstance ? C'est le secret de l'avenir. Quant à adopter une des langues vivantes usuelles, les amours-propres nationaux y feront toujours obstacle.

A ce problème, dont la solution complète ne paraît pas possible à l'heure actuelle, on peut cependant imaginer quelques solutions partielles. Si modestes qu'elles soient, elles constitueront toujours un progrès sur la situation présente.

La plupart des hommes de science ont au moins quelques notions ou des langues romanes, de l'anglais ou de l'allemand. S'ils pouvaient parvenir à en savoir assez pour déchiffrer le titre d'un travail et ses conclusions, ce serait déjà énorme. Sans doute, ils n'auraient de ce travail qu'une connaissance tout à fait rudimentaire. Mais sans doute aussi, cela pourrait déjà leur suffire pour reconnaître si, dans l'état de leurs recherches, ils peuvent le laisser de côté ou s'ils ont intérêt à le faire traduire intégralement, à leur usage, par un tiers connaissant la langue dans laquelle il est écrit. Il y aurait là, n'en doutons pas, un très grand progrès, suffisant pour que rien de réellement important ne puisse échapper aux intéressés.

Il nous a semblé que certaines dispositions, sur lesquelles une entente internationale serait possible, faciliteraient beaucoup la réalisation de cet idéal restreint, mais déjà fort désirable. Ce serait que les termes de la langue technique médicale fûssent sensiblement les mêmes dans tous les idiomes et toujours écrits en caractères romains.

Après tout, il n'est peut-être pas absolument nécessaire de posséder à fond une langue étrangère pour arriver au déchiffrage d'un titre et de quelques lignes de conclusions. Beaucoup d'hommes de science sont capables de cet effort en cinq ou six langues, et seraient cependant bien incapables de lire couramment un journal politique dans aucune de celles-ci. Il leur suffit de connaître les termes qui désignent les maladies, les symptômes, les médications, les réactions

* Report to the International Association of the Medical Press read at the Congress of the Association on Tuesday, August 5th, and published in French at the request of the Congress.

physiques et chimiques, quelques verbes techniques essentiels, et quelques adverbes établissant la négation ou des nuances capitales du sens. Ce bagage minimum ne comporte pas d'efforts surhumains.

Il deviendrait réellement à la portée de tous, si les termes médicaux restaient constamment les mêmes.

Chacun a pu s'en rendre compte en essayant de déchiffrer, par exemple, tel travail, écrit dans une langue étrangère, où tous les termes techniques sont empruntés au latin ou au grec: entérotomie, cholécystite, glossite, gastrotomie, néphrotomie, prostatectotomie, diastasis, céphalotribe, ectasie. En Allemagne, beaucoup d'auteurs ont la bonne habitude d'écrire en latin les noms des maladies et cela contribue singulièrement à faciliter aux travailleurs l'étude des ouvrages écrits dans cette langue, même quand ils ne la comprennent que très imparfaitement.

L'entente internationale ne porterait même que sur les substantifs, qu'il y aurait déjà là un progrès considérable.

Il nous a semblé que l'Association internationale de la presse médicale était toute désignée pour entreprendre une œuvre de ce genre, destinée à rendre les plus grands services aux travailleurs de tous les pays.

Si l'entente pouvait être réalisée entre les journaux, elle s'étendrait rapidement et d'elle-même aux livres. L'influence du journal est considérable en cette matière. Il suffit de voir quelle action plutôt fâcheuse a, sur le style courant de chacun de nous, dans tous les pays, la langue expéditive et relâchée dans laquelle sont écrits les journaux politiques que nous lisons quotidiennement. Les rédacteurs de journaux, quand ils ne sont pas des littérateurs de profession, écrivent le plus souvent la langue du langage parlé courant, qui ne se pique ni de recherche extrême ni d'élégance. C'est aussi grâce à eux que les tournures incorrectes, les impropriétés de termes finissent par prendre, par la force de l'habitude, droit de cité dans notre style. Trop souvent la presse contribue à fixer ainsi la déformation du langage et à dégrader définitivement les plus belles langues.

Ce pouvoir dangereux de la presse, notre presse médicale peut le rendre bienfaisant en contribuant à introduire dans la langue scientifique de tous les peuples l'usage de termes compris par tous les hommes du métier, qui y gagneront une plus rapide et plus large extension de leur savoir, par une meilleure connaissance des travaux étrangers.

La presse médicale y trouvera sa récompense; car chaque journal, mieux compris partout, en dehors de son propre pays, y gagnera un plus grand nombre de lecteurs étrangers.

En un mot, si cette réforme peut être réalisée, tout le monde y trouvera profit, les journaux comme les lecteurs. Cela vaut bien que chacun se résigne à quelques sacrifices sur le domaine de son langage national.

* * * * *

L'œuvre de l'unification des termes médicaux techniques se présente sous deux aspects très différents selon que l'on en envisage le passé ou l'avenir.

Pour l'avenir, il suffirait de se mettre d'accord sur certaines règles, et de les faire adopter, dans chaque journal, par tous les auteurs qui leur apportent leurs travaux. Par l'expression "avenir" il faut entendre les termes nouveaux qui s'introduisent constamment dans le langage scientifique, noms de maladies, déterminations de syndromes, dénominations d'espèces microbiennes, désignations des propriétés physiologiques ou thérapeutiques d'un agent organisé ou inorganisé, réactions vitales ou chimiques, etc. Il en naît ainsi plusieurs douzaines chaque année et l'on a reconnu jusqu'ici à leurs inventeurs un droit de parrainage, qu'il ne s'agit pas de supprimer, mais de réglementer. Il importe, en effet, de ne pas accroître davantage la confusion créée jusqu'à présent par l'absence de plan uniforme dans la création continue de la terminologie médicale, confusion à laquelle nous ont conduits tant de mots déjà créés ainsi, en toute fantaisie, dans le passé.

C'est la réforme de l'œuvre du passé, en effet, qui présentera les plus grosses difficultés. Il y a des droits acquis que l'on ne peut plus contester sans bouleverser tout le vocabulaire et risquer de rendre indéchiffrable la littérature de nos prédécesseurs. Il y a des mots incontestablement mal faits, mais si universellement acceptés qu'il est presque impossible d'y toucher maintenant. Il y a enfin des désignations patronymiques, tirées de noms d'inventeurs, qui font partie du domaine de l'histoire de la médecine, et qui, fussent elles reconnues injustement attribuées, ne peuvent plus être transformées, même en une expression plus juste, sans gêner toutes nos habitudes, et éveiller même peut-être des susceptibilités nationales. Or, quand on veut établir une entente, on doit chercher avant tout à ce que personne ne soit sacrifié, et à ce que les frais en soient faits par une contribution aussi égale que possible chez tous. C'est dire déjà que cette réforme, en ce qui concerne la terminologie actuellement en cours et léguée par le passé, devra être extrêmement prudente, et qu'il faut d'avance nous attendre à ce qu'elle ne porte que sur des points limités, au sujet desquels tout le monde pourra tomber d'accord.

* * * * *

Les règles à proposer aux futurs créateurs de termes techniques nouveaux, afin que ces termes puissent passer intégralement dans toutes les langues, sont, avons-nous dit, plus faciles à concevoir. Mais il importe que leur simplicité, leur logique, leur justesse soient d'une telle évidence qu'elles s'imposent d'elles-mêmes à tous sans provoquer de résistances, car celles-ci ne pourraient être passibles d'aucune sanction. On ne conçoit pas bien, en effet, quel tribunal arbitral pourrait faire céder l'auteur s'entêtant à imposer un mot nouveau mal bâti, qui lui plairait infiniment, dans le texte qu'il apporterait à son editeur, si celui-ci a, sur ce point, une opinion différente de la sienne. Admettrait-on, par exemple, que le Bureau de notre Association internationale se constituât en Commission supérieure de linguistique? S'il arrivait cependant que cette idée plût à nos collègues, au cours de la discussion qui va s'engager devant ce Congrès, je m'y rallierais des premiers; mais je ne me fais pas beaucoup d'illusions à ce sujet.

Le meilleur moyen, pour que le terme nouveau soit bien, dès sa naissance, accepté comme un élément indiscutable du patrimoine commun à toutes les langues, c'est qu'il soit emprunté, non à l'une des langues vivantes qui se disputent aujourd'hui la suprématie, mais à une des langues mortes qui sont les mères de toutes nos langues aryennes actuelles: le latin et le grec. Cette règle est d'autant plus facile à respecter qu'elle a été très généralement suivie jusqu'ici.

C'est donc au latin et au grec — plus souvent à ce dernier, plus riche, plus souple, mieux fourni en préfixes et en suffixes à action modificatrice bien précise — qu'il faudra conseiller de s'adresser, en continuant, je le répète, une tradition déjà fort heureuse.

Mais il est une précaution essentielle à observer; c'est que le mot nouveau soit emprunté à l'une ou l'autre des deux langues et ne soit pas un hybride des deux.

C'est là, en effet, une faute trop constamment commise. On en trouve à chaque instant des exemples, non seulement dans la terminologie scientifique, mais même dans le langage courant. Fréquemment, en effet, en français, par exemple, nous voyons affubler un mot de notre langue avec un préfixe grec ou latin, et traiter ces préfixes comme s'ils étaient eux-mêmes des termes français. La terminologie créée par les médecins, que l'on pourrait supposer plus correcte, est remplie de mots formés de radicaux d'origine linguistique différente, et composant ainsi des hybrides parfaitement ridicules: *auto-inoculation, hypertension, néoformation, diazo-réaction, sérodiagnostic, appendicectomie, varioloïde, varicocèle*, etc., dont beaucoup, malheureusement, sont si anciennement consacrés par l'usage qu'il ne faut guère espérer les voir disparaître. La nomenclature chimique est peut-être un peu responsable de cet emploi du préfixe tiré d'une langue et accolé mécaniquement à des termes tirés d'une autre: le suffixe *bi*, qui vient du latin, jure à côté des radicaux grecs, comme dans *bichromate, bioxyde*. Du coup nous avons admis en médecine *bicéphale* (au lieu de *dicéphale*). Mais que dire de *gastrosuccorrhée, mucorrhée*, etc., sinon que ce sont de véritables barbarismes?

Nous tomberons facilement d'accord, je l'espère, que dans la formation d'un terme nouveau, l'auteur devra adopter comme règle d'emprunter ses éléments à une seule et même langue, le latin ou le grec. Ex.: *polyphagie, egocentrisme*.

On peut demander aux mots nouveaux quelque chose de plus. C'est d'être nettement significatifs et de ne pas constituer autant de véritables devinettes. S'ils veulent désigner une maladie, ils doivent en évoquer un caractère essentiel, permanent, un symptôme objectif en un mot, et non pas s'efforcer à consacrer une théorie, une explication causale toujours sujette à révision. Le terme de *pithiatisme*, que M. Babinski a créé pour le substituer à celui d'*hystérie* (qui est précisément un type de dénomination tirée d'une interprétation plus tard reconnue fausse), ce terme est excellent, car ses deux radicaux (πείθω et ιατός) indiquent bien qu'il s'agit d'affections *guérissables* par la *persuasion*, caractère

fondamental de tous les troubles hystériques, et laissent de côté toute tentative d'interprétation, vouée à la caducité.

Enfin, il serait bon, quand on accole deux substantifs grecs, par exemple, de veiller à l'ordre dans lequel on les place, afin que le sens de leur association ne laisse jamais aucun doute. La terme d'*éréuthrophobie*, par exemple, est mal bâti. Le complément étant toujours placé avant le verbe dans *agoraphobie*, *hydrophobie*, etc., *éréuthrophobie* signifie littéralement *la peur du rouge* — qui est peut-être une maladie du taureau — mais non pas le "rougissement émotif de la face," sens que nous avons accepté à grand tort. Il faudrait dire *phobérythrie*, ou *phobérythrospasme*.

Reste un point plus délicat. L'adoption exclusive du vocabulaire antique supprimerait les dénominations tirées des noms d'auteurs.

Je conviens qu'il puisse paraître légitime de consacrer le droit de l'inventeur en conservant son nom à sa découverte. Mais il a été fait un tel abus du procédé qu'il convient de voir là précisément une des principales causes de la confusion qui règne dans la terminologie médicale moderne. On ne devrait pas étiqueter les compartiments de la pathologie comme on donne des noms aux rues dans une cité neuve.

On devrait, tout au moins, être très sobre de ces appellations, qui ont toutes le défaut le plus grave que puisse présenter un mot, c'est de ne rien apprendre d'objectif, à celui qui le rencontre pour la première fois, sur l'objet auquel il s'applique.

L'expression de *tabès dorsal spasmodique infantile* ne renseigne-t-elle beaucoup mieux le lecteur sur la maladie en question que celle de "maladie de Little"?

Mais ce n'est pas tout. Comme il est toujours difficile de savoir quel a été réellement le premier observateur en date, il arrive fréquemment que l'histoire nous montre ces appellations flatteuses comme très sujettes à révision. Précisément la maladie de Little (1846) se trouve avoir été décrite six ans avant lui par Heine. La maladie de Basedow avait été observée d'abord par Graves, et toute l'Allemagne a souri jadis d'une certaine maladie de Monckeberg qui n'est autre que la calcification de la tunique moyenne des artères des extrémités, décrite par Orth et par Virchow longtemps auparavant.

Ces jugements des morts, qu'appellerait le souci de la vérité historique, exposeraient à de continuels bouleversements de la terminologie.

Il est plus prudent, il est plus clair, de n'user de ce procédé qu'avec une extrême prudence. *Pasteuriser*, *Röntgenthérapie* et quelques autres termes de ce genre suffisent à consacrer, comme un hommage réellement exceptionnel, des découvertes considérables et authentiques, lorsque le nom et les travaux de l'auteur ont eu un tel retentissement qu'ils suffisent à révéler le sens du mot du même coup. Partout où il devient nécessaire de consulter un traité d'histoire de la médecine ou un dictionnaire pour déchiffrer l'énigme, le mot est mauvais.

Tout au plus pourrait-on admettre une exception pour les procédés chirurgicaux, qu'il est impossible de décrire en entier, dans toutes leurs phases, à l'aide d'un seul mot, et pour des instruments très spéciaux auxquels se rapporte la même difficulté.

Pour les maladies et les syndromes, le mot composé, grec ou latin, ou même le terme national s'il fait notoirement partie de la langue scientifique, peut suffire à tous les cas, s'il évoque un signe précis, un symptôme capital. Est-ce que le terme de *goitre exophtalmique* n'est pas infiniment plus objectif, plus descriptif, plus clair [bien qu'incomplet, puisqu'il néglige la tachycardie et le tremblement des doigts], que celui de maladie de Basedow?

Il est d'autant plus important de réagir dès maintenant contre cette tendance qu'elle est d'origine relativement récente et qu'il est encore temps peut-être d'arrêter le progrès du mal.

Les anciens n'usaient de ce mode de dénomination que pour les détails anatomiques délicats, et en usaient, avec les auteurs qui les avaient découverts, comme les géographes avec les explorateurs et les navigateurs en l'absence du nom véritable (qui serait celui qu'ont adopté les indigènes). Encore l'exemple de l'Amérique, qu'il eut fallu appeler Colombie, suffit-il à montrer tout ce que la méthode a d'artificiel et de dangereux. Les mêmes dangers existent pour beaucoup de ces dénominations anatomiques. La valvule de Bauhin, l'anneau de Vieussens, la capsule de Tenon, le cul-de-sac de Douglas, etc., pourraient sans inconvénients, à mon avis, être remplacés par des appellations plus descriptives.

D'autant plus que des jeux de mots peuvent se produire et amener des confusions. La *ténonite* (inflammation de la capsule de Tenon) est facile à confondre avec la *ténosite* (inflammation des tendons), et quand on parle de *ténotomie* il y a incertitude absolue, selon que c'est un chirurgien ou un oculiste qui parle.

Il y a en Allemagne une *Patella Krankheit*, qui n'a aucun rapport avec la rotule (*Patella*), mais qui n'est autre qu'une sténose pylorique tuberculeuse décrite par le médecin italien Patella (de Sienne).[1]

En résumé, pour toutes les créations de mots nouveaux, il faut recommander l'emploi des radicaux grecs, qui, intelligemment maniés, paraissent devoir suffire à exprimer tout ce qu'il est utile de dire pour évoquer une image visuelle.

Les préfixes, les suffixes sont assez nombreux et assez clairs dans cette langue pour nous donner des ressources suffisantes dans tous les cas.

Ex.: La terminaison en *ite* ou *itis* est adoptée pour toutes les inflammations: la terminaison en *cèle* pour les tuméfactions, en *ome* pour les néoplasmes, en *spasme* pour les contractures, en *sthénie*, pour qualifier les énergies, en *algie* pour évoquer les douleurs, en *tomie* pour indiquer une section, en *raphie* pour une suture, etc. N'est-ce pas suffisant, avec un peu d'ingéniosité, pour tout dire?

* * * * *

La révision des termes adoptés jusqu'ici présente, avons-nous dit, des difficultés infiniment plus considérables. Il faut tenir compte des droits acquis, des usages très anciens, et répétons-le, il faut éviter de rendre indéchiffrable, dans une fureur d'iconoclastie, toute la littérature existante.

Les changements à apporter devront donc être extrêmement prudents et c'est ici que, pour être certains d'obtenir l'assentiment de tous, il est nécessaire de faire appel au concours de tous.

Il n'est pas possible, dans les limites de cette étude préliminaire, de faire autre chose que démontrer la nécessité de cette œuvre, et proposer, pour sa réalisation, un programme à l'agrément des représentants des divers pays rassemblés dans ce Congrès.

Sa nécessité, je crois vous l'avoir démontrée: il est de l'intérêt de tout le monde scientifique, des lecteurs, des auteurs, des journaux, des éditeurs, que la nomenclature médicale tende vers une simplification de la terminologie, se rapprochant le plus possible de l'uniformité, en prenant cependant notre parti du fait qu'elle ne pourra jamais y atteindre absolument.

La terminologie médicale idéale, au point de vue international, devant, si tel est l'avis du Congrès, répondre aux règles qui viennent d'être tracées dans la première partie de ce rapport, un premier travail devrait consister à dresser la liste des termes conçus en dehors de ces règles, et un second, à discuter, au moyen d'une entente internationale, ceux d'entre eux à propos desquels l'accord pourrait se faire: 1° pour leur unification; ou, 2° si cela ne se peut, leur amélioration; ou enfin, 3° si rien de tout cela n'est possible, pour la création d'un mot nouveau correct, réellement international, à proposer à titre de synonyme facultatif, et qui pourrait, placé entre parenthèses, accompagner chaque fois, et tout au moins dans les titres des ouvrages, le terme usuel national conservé.

La liste des termes à récuser pourrait être dressée, dans chaque pays, par une commission spéciale, constituée par le bureau de l'Association de la presse médicale du pays, et par un certain nombre de personnalités signalées par leur compétence particulière: une place serait réservée aux savants versés dans l'histoire de la médecine, comme le demandait, à Budapest, notre collègue Tiberius de Györy, et à un helléniste ou un latiniste de profession.

Mais la terminologie médicale est constituée par un mombre assez considérable de mots: les diverses branches de la médecine ont chacune leur termes spéciaux dont beaucoup ne sont bien connus, dans leur sens exact, comme aussi dans les inconvénients de leur emploi, au point de vue international, que par les spécialistes eux-mêmes. Il serait donc utile que, dans chacune des ces Commissions nationales, figurât un représentant de l'oculistique, de l'oto-rhino-laryngologie, de la chirurgie, de la bactériologie, de la dermatologie, de l'épidémiologie, de la neurologie, etc., en un mot, de toutes les branches de la médecine qui ont chacune leur vocabulaire spécial et important.

[1] J'emprunte cet exemple à l'intéressant travail publié par le Dr WILHELM AUSTERLITZ, dans *Heilkunde*, Januar 1911, *Die medizinische Terminologie*.

Qu'on n'objecte pas que ce groupement arriverait ainsi à réunir un trop grand nombre de personnes. Plus la division du travail sera étendue, mieux et plus vite ce travail s'accomplira. La Commission qui procéda, en 1902, à la révision de la nomenclature médicale anglaise, ne comprenait pas moins de 33 membres. Il serait d'ailleurs aisé de faire appel aux sociétés médicales correspondant à chaque spécialité, et de les prier de désigner elles-mêmes un rapporteur pour le travail à exécuter sur le vocabulaire particulier de celle-ci.

Cette vaste enquête d'ensemble aboutirait à l'établissement, par la Commission de chaque pays, d'une liste des mots techniques non conformes aux règles de la terminologie médicale de l'avenir.

Le travail de la Commission nationale, réunie tout entière, consisterait à étudier les moyens de ramener chacun de ces termes à l'unité internationale, en indiquant à propos de chacun, si le sacrifice de ce mot à l'unité est 1° possible, 2° difficile, 3° impossible.

C'est alors qu'interviendrait le rôle d'une Commission internationale, dont le Bureau de l'Association internationale de la presse médicale formerait le noyau, et qui se constituerait suivant les mêmes règles énoncées plus haut pour chaque Commission nationale, c'est-à-dire avec adjonction de spécialistes tant soit peu polyglottes, et de linguistes.

Cette Commission se livrerait à une comparaison des listes qui lui seraient fournies par les divers pays. Dans toutes les Commissions internationales, diplomatiques ou techniques, même au tribunal de la Haye, la règle fort sage est de commencer par l'étude des points sur lesquels on pressent que tout le monde sera d'accord, ces points fûssent-ils accessoires. Les termes qui, sur toutes les listes, seraient indiqués comme pouvant faire l'objet d'un changement désirable, seraient immédiatement mis de côté et ramenés à l'unité.

Pour ceux à propos desquels des opinions divergentes se feraient jour, il y aurait lieu de procéder à un examen de ces opinions, en les pesant plutôt que de les compter et de les soumettre à la loi oppressive du nombre. *Non numeranda, sed ponderanda.*

La champ des investigations étant ainsi diminué, la Commission internationale dresserait une liste générale des termes restés différents dans un grand nombre de pays, et ferait, à propos de chacun d'eux, la proposition d'un terme international unique. Celui-ci serait ou un mot ancien facile à comprendre, admis par la très grande majorité de tous les pays, ou un mot nouveau composé correctement.

Cette liste serait communiquée à chacune des Commissions nationales, qui l'examinerait à son tour.

Deux cas se produiraient alors. Ou cette Commission accepterait le terme international en se ralliant au principe de l'unité, dans l'intérêt de tous: ou elle persisterait dans le maintien du terme qui appartient à sa terminologie nationale, pour des raisons qu'il importera toujours de respecter. L'œuvre que nous voulons entreprendre ne sera réalisable que si elle se fonde sur le consentement unanime et ne cherche à violenter personne.

Une fois les réponses de toutes ces Commissions nationales parvenues à la Commission internationale, celle-ci, dans une dernière réunion, établira la liste définitive de la nomenclature unifiée.

Pour les termes à propos desquels l'entente n'aura pas pu se faire, elle dressera une liste des mots nouveaux qu'elle propose à titre de synonymes facultatifs et qui, au moins dans les titres et les conclusions des publications médicales, pourraient être reproduits entre parenthèses après le terme national.

* * * *

Ce vaste plan d'ensemble me paraît parfaitement réalisable si chacun veut bien y apporter son concours. Les Commissions nationales pourraient être constituées en Octobre prochain, et leur travail être terminé pour Pâques ou Août 1914, date à laquelle se réunirait la Commission internationale. Celle-ci désignerait des rapporteurs spéciaux qui, à la fin des vacances, auraient établi la première liste à renvoyer aux diverses Commissions nationales. La liste définitive pourrait être établie par la seconde réunion de la Commission internationale en Août ou Octobre 1915.

Une brochure éditée par l'Association internationale de la presse médicale, au besoin avec la collaboration pécuniaire des diverses associations, ce qui réduirait la participation de chacune à peu de chose, enregistrerait les résultats acquis dans la forme indiquée plus haut: elle serait distribuée aux membres des Associations de presse et mise en vente pour le public.

Je le répète, en terminant, nous n'avons pas la prétention de faire une œuvre complète. Nous savons déjà qu'elle ne serait même pas absolument désirable, en raison du bouleversement qu'il apporterait dans la littérature. Nous demandons un progrès. Si réduit qu'il soit, il sera toujours préférable à l'état de confusion où nous nous trouvons, et qui ne fera que s'aggraver si nous persistons dans les mêmes errements et si nous n'adoptons pas une règle pour l'avenir.

Cette confusion est telle, que nous voyons actuellement non seulement les mêmes maladies porter des noms très différents, inconciliables, dans les diverses langues—ce qui n'est étonnant, tout en formant l'objet de nos regrets en ce moment—mais le même mot être employé dans plusieurs langues pour désigner des maladies très différentes. *Anthrax* en français signifie la folliculite cutanée phlegmoneuse; en anglais, il s'applique à la maladie charbonneuse: tandis que l'allemand dit, pour celle-ci, *Milzbrand*. Dans ce cas le mot anglais est sans doute le meilleur. Est-ce qu'une entente sur ce point ne serait pas désirable?

Et pour prendre un exemple du premier cas, ne vaudrait-il pas mieux que *varicelle*, terme tiré du latin, remplaçât l'anglais *Chicken pox*, l'allemand *Windpocken*, etc. Ou bien, si les amours-propres nationaux sont irréductibles, ne pourrait-on obetenir que les titres comme je l'ai dit, portent, pour les travaux anglais, l'indication double: *Chicken pox* (*Varicella*), et pour les travaux allemands: *Windpocken* (*Varicella*)?

Les termes de *Roséole* en français, de *Rötheln* en allemand, et de *German Measles* en anglais ne pourraient-ils, pour la plus grande commodité des auteurs de tous les pays, être ou remplacés ou accompagnés, à titre de synonyme placé à leur suite, entre parenthèses, par celui de *Rubella* qui est le mot latin, qu'on retiendrait vite dans le monde savant et qu'au moins, dans les premiers temps, on interpréterait à l'aide de la liste internationale polyglotte dressée par l'Association.

La maladie qui s'appelle en français *Morve*, en anglais *Glanders* ou *Farcy*, en allemand *Rotz* ou *Wurm*, ne pourrait-elle trouver un terme unique, au moins à titre de synonyme international—*équinia* ou un autre—sur lequel nous pourrions nous mettre d'accord?

Il est inutile de multiplier ces exemples, qui seraient innombrables.

J'ai tort d'employer ce mot, car il donnerait à penser qu'il s'agit d'un travail d'Hercule à entreprendre, qui risquerait de nous décourager. Le nombre des substantifs médicaux ne dépasse guère, après tout, le chiffre de 1500 à 2000, dont les 8 dixièmes sont des mots internationaux tirés du grec ou du latin, pour lesquels, par conséquent, le travail est tout prêt. L'œuvre ne porterait guère, à mon avis, et selon une première estimation superficielle, que sur 200 mots à peine. La tâche n'a donc rien d'effrayant.

Quant aux bouleversement à redouter, bien qu'ayant posé en principe qu'il faudra toujours tenir compte des droits acquis et ne violenter aucun amour-propre national, je crois qu'il y aura beaucoup moins d'émotion qu'on ne pourrait le croire au premier abord, et nous en avons eu un exemple tout récent.

Le gouvernement anglais, par la voie diplomatique, a proposé, l'an dernier, que le terme de *Fièvre de Malte* fût abandonné dans la nomenclature médicale et remplacé par un autre, qui fut plus exact, car la maladie n'existe pas qu'à Malte, mais dans tous les pays riverains de la Méditerranée, et qui aussi fût plus juste, car celui-ci faisait tort à la réputation de la colonie au point de vue sanitaire.

Le mot de *Mélitose*, tiré du nom de l'agent infectieux, le *Micrococcus melitensis*, fut adopté très rapidement, et aujourd'hui il est compris de tous les bactériologistes et de tous les médecins dans le monde entier. Celui de *Fièvre de Malte* n'a pas disparu, certes, du jour au lendemain. Mais on peut prévoir son effacement progressif, le mot *Mélitose*, grâce à son caractère international, ayant toutes les chances de lui être préféré par les auteurs qui trouvent intérêt à ce que leurs productions soient comprises par tous les lecteurs étrangers.

En résumé, l'œuvre est très réalisable. Limitée sagement à ce que nous demandons, c'est-à-dire à une règle pour les termes nouveaux à créer dans l'avenir, à une entente pour les termes du passé, dont l'unification serait reconnue possible par tout le monde, enfin à la création d'un synonyme international facultatif, elle est appelée, si vous voulez bien lui apporter votre concours, à assurer un progrès capital à la diffusion des connaissances médicales à travers le monde, et ce sera l'honneur de l'Association internationale de la presse médicale de l'avoir entreprise.

IMPERIAL CANCER RESEARCH FUND.

THE annual meeting of the Imperial Cancer Research Fund was held on July 17th at the Examination Hall, Queen-square, Bloomsbury, the Duke of Bedford presiding. Among those present were Sir William Church, Sir Thomas Barlow, Sir Rickman Godlee, Lord Tavistock, Mrs. Bischoffsheim, Sir Douglas Powell, Sir John Tweedy, Sir Francis Lovell, Lady Meiklejohn, Mr. C. D. Rudd, Dr. F. W. Andrewes, Professor Sims Woodhead, Dr. John Tatham, Sir A. Pearce Gould, Professor William Bulloch, Dr. J. A. Murray, Dr. B. R. G. Russell, Dr. A. Compton, Dr. E. F. Bashford (general superintendent), and Mr. F. G. Hallett (secretary).

Letters were read from Adeline, Duchess of Bedford, Sir Thomas Glen-Coats, Lady Wernher, Lord Ashton of Hyde, Lord Inverclyde, Sir Sigismund Neumann, Lord Shuttleworth, The Knight of Kerry, Mr. J. A. Mullens, Mr. Waldorf Astor, Sir Henry Morris, Bart., Dr. T. T. Whipham, Mr. L. Neumann, Lord Rothschild, Mr. A. J. Balfour, Lord Strathcona, Sir Charles Morrison-Bell, Mr. Edwin Tate, and others.

In presenting the annual report Sir WILLIAM CHURCH said: During the past year the Imperial Cancer Research Fund have moved into new and more commodious quarters in the New Examination Hall, where the work of the Fund can be conducted under more favourable conditions than existed in the building on the Embankment. The move necessarily interfered somewhat with the work of our staff, but owing to the care taken by Dr. Bashford and his staff in making provision for the move, the interruption to the scientific work was very slight. The work of the year has been mainly directed to the marshalling of facts proved experimentally to be constant, and to the observation of the varying results obtained from prolonged propagation of strains of cancerous growth originally obtained from different spontaneous tumours. The statistical investigations as to the occurrence of cancer in India, our colonies and dependencies, and among uncivilised races have been continued, and are of great interest and value. It is gratifying to find that investigations carried out by the German Colonial Office confirm the results we had arrived at. The German report states that "it is certain that no new growth occurs in Germany which is not also found in the natives of the tropics, and no new growth occurs in the tropics which is not found in Germany."

During the year there has been more than the usual number of requests for information as to the existence of "cancer-houses" or as to districts in which the occurrence of cancer was above the average. Investigation showed that in each case which could be satisfactorily examined the age and sex of the population appeared to be the determining factor rather than local or climatic conditions. As in former years, various claims of possessing a cure for cancer were brought to the Fund's notice. Where any information which could be relied on was available, these claims were investigated and were, I regret to say, not borne out by the evidence obtained. The breeding experiments to try to solve the question of heredity in cancer have been continued, and the numbers have now reached so large a figure that it is permissible to compare the two strains of mice. The total number of female mice bred was 800; of these, 476 were descended from mice whose mother and one or both grandmothers were cancerous, and 324 from mice whose mother and both grandmothers were non-cancerous. Of the 476 of recent cancerous ancestry 98, or 20·58 per cent., developed cancer; while of the 324 of remote or non-cancerous ancestry 38, or 11·69 per cent., developed cancer. Only female mice were taken into account in this enumeration, for it is in them that spontaneous cancer most frequently occurs.

The observation and study of the constancy and variability of the cells and histological structure in propagated cancer tumours, together with researches into the acquisition and loss of immunity under certain circumstances, have been the principal work of the scientific staff during the year. These subjects are so highly technical that I can only allude to the principal features observed. In the old laboratories as many as 86 spontaneous mouse tumours were kept under propagation for the purpose of studying their constancy and variability, and the results are given in the Fourth and Fifth Scientific Reports; consequently, it was considered unnecessary to transport 59 of them to the present laboratories. Twenty-seven were retained on account of the fresh light they appeared to throw not only on the constancy and variability of the tumour-cell and the histological structure of the tumour, but also on the variations they present in their power of conferring immunity. Evidence of the constancy with which histological structure is maintained is shown by tumour 27, which, after seven years' propagation in two slightly different strains, still retains the structure of the original tumour—viz., a papilliferous adenoma; the same constancy of type is shown by tumours 72 and 155, which have been respectively propagated for seven and five years. On the other hand, tumour 91, originally and in its early transplantations acinous and gland-like, now presents a solid or alveolar structure whether the growths are young or old. Tumour 37, propagated in as many as 17 strains on account of the great variety of form they presented, has yielded seven strains which maintain with singular constancy their individual differences, the strains being (*a*) alveolar carcinoma, (*b*) three strains of adeno-carcinoma, (*c*) carcinoma with spindle cells, (*d*) polymorphous-celled sarcoma, and (*e*) spindle-celled sarcoma.

Eight tumours (486, 630, 349, 386, 466, 297, 239, and 292) which presented a tendency to keratinisation as their distinguishing differentiation have been continuously propagated; 486 and 630 still produce squamous epithelium after two and three years' propagation, 466 shows a combination of keratinisation with the formation of sebaceous material which has continued to characterise it during three years and 27 transplantations. 349 and 386 have completely lost the power of differentiation into squamous epithelium and are now quite free from keratin. Tumours 466 and 297 showed sebaceous differentiation, and 297 has maintained this character in full activity for four years during 29 transplantations. Another tumour, 239, whilst showing sebaceous differentiation for 30 transplantations, appears now to be losing that character. From tumour 292, which showed sebaceous material and keratin, two distinct strains were obtained. In strain A the keratin continued for seven transplantations, and then disappeared to reappear again in diminished amount from the nineteenth to the twenty-fifth transplantations. In the fortieth transplantation it was found that the contents of the vacuoles were not sebaceous material but glycogen. The other strain, B, showed both sebaceous material and keratin in small amount for the first 20 transplantations; they then disappeared and have not as yet returned.

The formation of glycogen by tumour cells varies in a similar manner. Tumour 113 has continued to show relatively enormous quantities of glycogen, although it has been continuously propagated for five and a half years, whilst tumour 830, originally containing glycogen in considerable amount, has gradually lost the power of forming this substance. The formation of keratin, glycogen, and fat in the above-mentioned tumours shows that in the investigation of cancer other subjects than the morphology of new growth must be considered. On what do the powers of producing these substances depend? Again, what accounts for the different properties appearing to exist in certain tumours hindering the development of new growths in some cases, and in others producing sarcoma in the connective tissue of normal mice? It is obvious that these effects must depend, not on histological structure of the tumour, but on some hitherto unrecognised property which some appear to possess continuously, while in others it is lost after a shorter or longer interval. The development of sarcoma subsequent on the transplantation of carcinoma has been described in previous reports in connexion with tumours 37 and 100, and in the Fourth Scientific Report the apparent loss of this power is recorded for tumour 37. Subsequent investigations continued for more than two years show that this power has been lost in five substrains derived from tumour 37. Tumour 100 caused the development of sarcoma in every animal, from the twelfth to the twenty-fifth transplantation, if the transplanted tumour was allowed to grow for about two months, but only produced pure carcinoma if transplanted after growing for a month or less. Four of these carcinomatous substrains have been kept growing and present variations from this behaviour. In the first substrain (*a*) the variation is in the earlier appearance of sarcoma. This early appearance of sarcoma

and the rapidity of its growth rendered it impossible to retain the carcinoma in propagation after the twentieth subtransplantation. In the second substrain (*b*) sarcoma did not manifest itself unless the transplanted tumour had been growing for 100 or more days, and in (*b*) tumours 200 days old have, when transplanted, remained pure carcinoma, the power of producing sarcoma being lost. Strains (*c*) and (*d*) began to cause sarcoma when about 60 or 70 days old, and have continued to do so until the 53rd transplantation, but now appear to be losing this power. This power to induce sarcoma development is characteristic of a small minority of transplantable tumours; when it occurs it is almost certainly a characteristic of the primary spontaneous tumour, and this sarcoma development has been observed when a transplantation has been made from a spontaneous tumour into the same mouse in which the primary tumour was found. The nature of this power in some carcinomas is still obscure. Cell-free filtrations were prepared from carcinomatous tumours and mixed carcinoma and sarcoma was dried *in vacuo* with every care; but inoculation with these produced no results. It has been found that tumours apparently sarcomatous in character occurring in the rabbit and guinea-pig can be successfully propagated only in their own species, and are incapable of immunising other kinds of animals against the inoculation of tumours.

Further evidence has been obtained that the resistance to growth induced by the inoculation of normal or of tumour tissue is identical in nature. In both the maximum resistance is reached in about 10 days, and is gradually lost, normal susceptibility to inoculation being regained in 80 days. Attention was first called in 1906 to the part played by the simultaneous absorption of tumour tissue in hindering its own growth. After six or seven years of the observation and study of 86 strains of distinct primary origin, it became possible to divide these strains into groups, each having specific types of growth, and to select from them strains exhibiting the characteristic features of the group in the highest degree. The differences in these groups appear to be dependent on differences in the original tumours and not on the soil in which they have been grown, in all cases normal mice having been made use of. Thus, tumour strain 206 after five years of transplantation still takes and grows rapidly in every case, but all the tumours cure themselves and eventually disappear; while, on the other hand, strain 47 after seven years' propagation grows slowly in a small proportion of the mice experimented on, and the tumours disappear in the majority of them, but not in all cases. Strain 199 grows rapidly in more than one-half of the inoculations, but a high proportion of the tumours disappear. Tumour strains 63 and 50, which formerly behaved in a somewhat similar manner, now grow in every animal inoculated and do not disappear. Fresh experiments on the peculiar characters of individual tumours appear to throw some light on this complex subject. If spontaneous tumours of distinct histological features, taken from two separate animals A and B, are intimately mixed together and inoculated into A and B, that obtained from A takes in A and that from B in B, whilst B disappears in A and A in B, the probable explanation being that the absorption of A confers powers of resistance to the growth of A in B, but does not confer any such immunity against the growth of the tumour B originally had. Propagated tumours which only exhibit transitory growth when inoculated into normal animals present exactly the same features as do normal tissue cells, both agree in producing resistance to the growth of grafts of themselves inoculated subsequently, whilst normal or tumour tissue taken from another animal when inoculated produces resistance both to its own growth and to the development of grafted tumour tissue. Experiments have shown that some strains of propagated tumours grow progressively whilst other strains have a tendency to disappear, and it is found that inoculation with tumour tissue from strains in which the growth is progressive confers less powers of resistance to subsequent inoculation with other tumour tissue than does inoculation with tumour tissue taken from strains of propagated tumours which have a tendency to disappear. The power of inducing resistance to the development of tumour tissue appears, therefore, to be due to some property inherent in the tumour itself and not dependent on other causes. The equipment of the new laboratories for chemical and biochemical research received very careful attention. A considerable amount of work bearing on carbohydrate metabolism and the glycogenic properties of cancer cells has already been done, but is not sufficiently advanced for publication.

In seconding the adoption of the annual report, Sir A. PEARCE GOULD said he hoped that the easy way in which Sir William Church had presented the facts of the report would not make anyone think that the issue of the report was easy work. The extremely careful, elaborate, and numerous investigations had been very important, and they had certainly been very successful in throwing a good deal of light upon the still dark problem of the nature of cancer. The strongest feeling he had in reading the report was the proof it gave of the value of continuous work such as had been carried on by the Fund for 11 years. Possibly when the scheme was founded some people might have thought that a few years would find the problem solved, but as the work had progressed further, unknown fields had rendered themselves evident. They could not, therefore, look for any speedy conclusion of the work, nor for any limitation of the area over which investigations would extend. He thought it was evident that there were fields of research beyond those which had been explored hitherto which were likely to throw considerable light on this problem. Another fact brought out by the report was the value of the bulk of the work. Had Dr. Bashford and his fellow workers been content to work with a limited number of tumours or experiments, they would not have been in anything like so good a position as they were now in the knowledge of cancer. No one could doubt for one moment that the work done had brought very materially nearer the day when that blessed word "cure" for cancer might be used.

The report was adopted. Sir JOHN TWEEDY moved a vote of thanks to the chairman and members of the executive committee, the subcommittees, the honorary treasurer, and others who had assisted in the work of the Fund during the past year. He said the whole of the report testified to the ability, the skill, and the knowledge which the members of the committee brought to bear upon their work.

Mrs. BISCHOFFSHEIM seconded, and the vote was unanimously accorded.

Sir RICKMAN GODLEE proposed that Mr. Edwin Tate be appointed a vice-president of the Fund. He said Mr. Tate belonged to a family who had wisely exerted themselves in benefiting the cause of education, and now Mr. Tate had shown his wisdom in making the Fund a munificent donation, and ear-marking it so that it might be placed to the endowment fund, which had now reached the sum of £56,000.

Sir WATSON CHEYNE, in seconding, said the Fund this year had encroached on capital funds because of the expense of moving into that building and fitting up the laboratories, but he was glad to say that they had not had to sell out investments to pay current expenses. It was to gifts such as that of Mr. Tate that they owed that happy result.

The resolution was unanimously adopted. On the proposition of Sir R. DOUGLAS POWELL, seconded by Dr. JOHN TATHAM, Mr. Edmund Owen was elected a member of the General Committee.

Sir THOMAS BARLOW, in moving a vote of thanks to the Duke of Bedford, said they owed much to His Grace for the unremitting and enlightened help which he gave to that great undertaking. The support which the duke had so consistently rendered was a great help to all right-minded people in maintaining the position of the Fund.

Sir WATSON CHEYNE, in seconding, said they had special reason to thank the Duke of Bedford this year, because by his personal efforts he had achieved a marked success in increasing the income of the Fund and the number of the subscribers.

The vote was unanimously accorded.

The DUKE of BEDFORD in reply said: "It is quite true that I have made a special appeal on behalf of the Fund, although the present moment is not a good one for getting money for such a purpose as that of scientific research, even though that research is so intimately connected with life and death as cancer. However, my appeal has had a certain measure of success, resulting in 16 additional annual subscriptions amounting to £184 and donations amounting to £455. The immense difficulty and the very wide range of the

investigation must reconcile us to the fact that no curative results could yet be reported, but if we consider the enthusiasm and singleness of purpose with which the inquiry is being conducted, we have every reason to be hopeful of the future. It is very largely due to this Fund that the medical mind of the world is becoming concentrated on trying to discover a cure for cancer. Of course, the research is not confined to the British Dominions. It is carried out all over the continent and in the United States of America. The research is no longer imperial; it has become an international research. All the world over highly trained scientific minds are collaborating in the inquiry, interchanging views on lines of work and laboratory methods, comparing notes, and placing their material and experience at the disposal of one another. In this international effort to solve the problem the investigators whose services our Fund have secured have taken a leading part. I trust that they will retain that position, but if they are to do so we, and by that I mean the public, must continue to place at the disposal of the general superintendent and his colleagues the most complete equipment and the most capable brains that can possibly be obtained. We must, in other words, aid the conquest of a terrible disease by finding the necessary money."

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

MEETING OF COMITIA.

AN ordinary Comitia was held on July 31st, Sir THOMAS BARLOW, Bart., K.C.V.O., the President, being in the chair.

The minutes of the previous meeting were read and confirmed.

The PRESIDENT announced the bequest to the College of a gold snuff-box by the late Dr. W. H. Dickinson, and the gift of two letters, one by Dr. W. S. Greenfield, the other by Mrs. Bond.

The following gentlemen having passed the required examination were admitted to the Membership of the College:—Percy William Bassett-Smith, C.B., L.R.C.P.; Cecil Clarke, M.D. Lond., L.R.C.P.; Arthur Davies, M.D. Lond., L.R.C.P.; Alfred Hope Gosse, M.B. Camb., L.R.C.P.; Edward Burton Gunson, M.D. Edin.; Abd-el-Aziz Ismail, L.R.C.P.; William Wilson Jameson, M.D. Aberd.; Theodore Stewart Lukis, M.D. Lond.; and Charles Henry Geoffrey Ramsbottom, M.D. Vict.

Licences to practise Physic were granted to 86 candidates who had passed the necessary examinations.

Diplomas in Public Health were granted, jointly with the Royal College of Surgeons of England, to the following candidates who had satisfied the examiners: Ewald Mouat Balthasar, Arthur Francis Bell, William Bethune, Herbert Stuart Blackmore, William Harold Butler, James Anthony Delmege, Hari Shankar Dube, Walter Robert Dunstan, Andrew Leslie Dykes, Robert Philip Garrow, Arthur Gaskell, Samuel Ernest Gill, Christina Love Goode, Claud Sebastian van Renen Harwood, Abd-el-Aziz Ismail, Robert George Johnson, Percival Maurice Keane, Gerard Ainslie Kempthorne (Captain R.A.M.C.), Norman Maclean Leys, Charles Herbert Lilley, John Alfred Steele Phillips (Captain I.M.S.), Edward Selby Phipson (Captain I.M.S.), Thomas William Watkin Powell, Laura Williams Pugh, Balwant Rai, Shobha Ram, Hugh Godwin Sherren (Captain R.A.M.C.), George Henderson Stevenson, and John Taylor (Captain I.M.S.).

The following College officers and examiners were then appointed:—Censors: Sir James Kingston Fowler, K.C.V.O., Dr. William Hale White, Dr. Howard Henry Tooth, C.M.G., and Dr. Theodore Dyke Acland. Treasurer: Sir Dyce Duckworth, Bart. Emeritus Registrar: Dr. Edward Liveing. Registrar: Dr. Joseph Arderne Ormerod. Harveian Librarian: Dr. Norman Moore. Elected Members of the Library Committee: Dr. Humphry Davy Rolleston, Dr. Leonard George Guthrie, Dr. Herbert Morley Fletcher, and Dr. Raymond H. P. Crawfurd. Curators of the Museum: Dr. John Mitchell Bruce, Dr. Seymour John Sharkey, Dr. Frederick William Andrewes, and Dr. William Hunter. Finance Committee: Dr. Donald W. C. Hood, C.V.O., Dr. Hector William Gavin Mackenzie, and Sir James Reid, Bart., G.C.V.O., K.C.B. Examiners: Chemistry, Mr. John Millar Thomson and Mr. Hugh C. H. Candy; Physics, Mr. Herbert Stanley Allen and Dr. Frederick Womack, B.Sc.; Practical Pharmacy, Dr. Henry Johnstone Campbell, Dr. Robert Briggs Wild, Dr. Reginald Henry Miller, Dr. Arthur Robertson Cushny, F.R.S., and Dr. Walter Ernest Dixon, F.R.S.; Physiology, Dr. Leonard Erskine Hill, F.R.S., and Dr. John Mellanby; Anatomy, Mr. William Wright; Medical Anatomy and Principles and Practice of Medicine, Dr. Lauriston Elgie Shaw, Dr. Hector W. G. Mackenzie, Dr. Frederick Walker Mott, Dr. Judson Sykes Bury, Dr. Arthur Francis Voelcker, Dr. Cyril Ogle, Dr. Raymond H. P. Crawfurd, Sir Bertrand E. Dawson, K.C.V.O., Dr. Wilfred John Harris, and Dr. Harold Batty Shaw; Midwifery and Diseases Peculiar to Women, Dr. Charles Montague Handfield-Jones, Dr. John Shields Fairbairn, Dr. Herbert Williamson, Dr. Cuthbert H. J. Lockyer, and Dr. John Benjamin Hellier. Public Health: Part I., Dr. Henry Richard Kenwood; Part II., Dr. Louis C. Parkes. Tropical Medicine: Bacteriology, Dr. Frederick William Andrewes; Diseases and Hygiene of the Tropics, Dr. William John Ritchie Simpson, C.M.G. Murchison Scholarship: Dr. Francis de Havilland Hall and Dr. Humphry Davy Rolleston.

The following communications were received and ordered to be entered on the minutes: 1. The Secretary of the College of Surgeons, dated July 16th, reporting proceedings of the Council of that College on July 10th. 2. The Dean of the Faculty of Medicine, University of Edinburgh, dated July 3rd, stating that the Faculty recommend that the Murchison Memorial Scholarship should be awarded to Alan W. S. Sichel, B.A., M.B., Ch.B.

On the recommendation of the Council, the Baly medal was awarded to John Scott Haldane, M.D., F.R.S.

Dr. F. W. Andrewes was elected a representative of the College on the Executive Committee of the Imperial Cancer Research Fund.

A report was received from the representative of the College on the General Medical Council and another from the Committee of Management, dated July 8th, recommending that Exeter School, Northampton and County School, Northampton, and Taunton School should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics.

The quarterly report of the College Finance Committee, the annual reports of the Library Committee, the Curators of the Museum, and the Imperial Cancer Research Fund were presented.

Books and other publications presented to the library during the past quarter were received, and the thanks of the College was given to the donors.

The PRESIDENT then dissolved the Comitia.

ANNUAL REPORT FOR 1912 OF THE MEDICAL OFFICER OF HEALTH FOR THE PORT OF LONDON.

THE annual report of Dr. Herbert Williams, the medical officer of health for the Port of London, has recently been published by authority of the Court of Common Council. It relates to the complete year 1912, and is the eleventh of the series. The subject matter is arranged in the following groups: (*a*) medical inspection and infectious disease; (*b*) food inspection; and (*c*) sanitary inspection of shipping and shore premises. By way of preface a concise and useful index is inserted, which greatly facilitates reference to the contents of the volume.

Medical Inspection and Infectious Disease.

On arrival at Gravesend or Sheerness all vessels from foreign ports are visited by a medical officer, who investigates all cases of illness occurring during the voyage, and in the case of vessels arriving from infected or suspected ports every person on board is carefully examined by him.

In the year under notice 2366 vessels were medically inspected, a number somewhat below the average. The diminution was probably due to the "strike" which prevailed in the Port of London for two months. The number of cases of infectious diseases reported was 343, of which 80 were treated in the Port Sanitary Hospital, the remainder going to other institutions. No epidemic of dangerous infectious disease occurred last year within the Port of

London. From the public health standpoint it is important that persons arriving here from "infected," or even "suspected," ports should be prevented from going ashore until the vessels have been medically inspected. The regulations of the Local Government Board do not prohibit the landing of anyone at our ports unless the ship actually contains a case of plague, cholera, or yellow fever. But Dr. Williams insists that these regulations need strengthening so as to prevent the landing of anyone on our shores without previous inspection of the ship by the Customs officers or the local medical officer of health. Among the reported cases of infectious disease may be noted 61 of enteric fever, 34 of small-pox, 37 of diphtheria, and 10 of scarlet fever. The list now includes for the first time pulmonary tuberculosis, of which disease 71 cases were notified last year. As evidence of the care with which preventive measures are carried out by modern sanitarians, it is worthy of note that with a view of controlling the spread of infection by means of passengers possibly incubating, though not manifestly suffering from infectious disease, the names and addresses of all passengers and crews of infected vessels are promptly notified to the sanitary authorities of the districts in which the travellers reside.

Plague.

Nine cases of plague, or suspected plague, among passengers from abroad were notified in the course of last year, details of which are given in a special table. Among rats in the Port of London plague has appeared in every one of the last five years. In this connexion the following weighty remarks by the medical officer of health deserve attention. "Plague is now epidemic in so many parts of the world with which the Port of London is in constant communication that vessels arriving thence must be considered as potential means of conveying infection to this country." He points out the necessity of rendering absolutely "rat proof" all buildings used for the storage of food-stuffs, as well as of fumigating vessels with lethal gas at intervals not exceeding six months for the destruction of rats on board. In the interests of public health the bacteriological examination of rats has been systematically pursued by the port sanitary authority in order that the earliest occurrence of plague among rats may be detected.

Cholera.

Only two cases of actual or suspected cholera were reported last year at the Port, although the disease was very prevalent in India. There was not much cholera anywhere in Europe. At the International Sanitary Conference in Paris early in the year the question of procedure in the case of cholera germ carriers was seriously discussed, several of the delegates pressing for the bacteriological examination of all contacts or suspected persons.

Diphtheria.

Twenty-seven cases of diphtheria (none of which were fatal) occurred on the training ship *Warspite* at irregular intervals during the year. More than 200 boys are ordinarily accommodated in this ship. Careful examination of the sanitary arrangements of the vessel is being carried out, and the belief is entertained that the continuance of the disease must be due to some small local cause, the exact nature of which has not as yet been determined.

Tuberculosis.

Seventy cases of pulmonary tuberculosis were reported among the crews of incoming ships during the year. Dr. Williams remarks that the conditions under which seamen live on board many of the ships are extremely favourable to the spread of infection. The occupants of some of the seamen's quarters he describes as "*troglodytic*," for many of these places are similar to caves, dark, overcrowded, and ventilated by an iron pipe, which is generally blocked up, thus allowing the entrance of fresh air only through the door. As illustrative of the danger of infection which may possibly arise from persons on board suffering from pulmonary tuberculosis, he gave an example of a baker on a steamer carrying a large number of passengers who was working on board ship for six months when he was found to be suffering from pulmonary tuberculosis, and was then put off duty.

Food Inspection.

Last year the quantity of food-stuffs seized in the Port of London was larger than in any previous year. More than 3758 tons of unsound food of various kinds were seized and destroyed or so disposed of as to prevent its use for human consumption. Large quantities of beef and mutton were imported from Australia, New Zealand, and South America. For the most part the meat was in good condition, the proportion condemned as unsound being exceedingly small. Of the pork seized, most of which came from Australia, 19 carcasses were condemned as affected with tuberculosis, and therefore unfit for food.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns, with populations exceeding 50,000 persons at the last Census, and whose aggregate population at the middle of this year is estimated at 17,852,766 persons, 9021 births and 3774 deaths were registered during the week ended Saturday, July 26th. The annual rate of mortality in these towns, which had been 11·2, 11·4, and 11·3 per 1000 in the three preceding weeks, further declined to 11·0 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these towns averaged 11·2, against 10·7 per 1000 in London during the same period. Among the several towns the death-rate ranged from 2·6 in Enfield, 2·9 in Eastbourne, 3·6 in Hornsey, 4·8 in Gillingham, and 5·1 in Southampton, to 16·2 in Rotherham, 16·7 in Walsall, 17·2 in Dudley, 17·4 in Dewsbury, and 18·3 in Great Yarmouth.

The 3774 deaths from all causes in the 96 towns were 97 below the number in the previous week, and included 394 which were referred to the principal epidemic diseases, against 344 and 343 in the two preceding weeks. Of these 394 deaths, 214 resulted from infantile diarrhœal diseases, 77 from measles, 50 from whooping-cough, 31 from diphtheria, 15 from scarlet fever, and 7 from enteric fever, but not one from small-pox. The mean annual death-rate from these diseases in the week under notice was equal to 1·2, against 1·0 per 1000 in each of the two preceding weeks. The deaths of infants (under two years of age) attributed to diarrhœa and enteritis, which had been 107, 155, and 149 in the three preceding weeks, rose to 214, and included 55 in London, 15 in Birmingham, 15 in Birkenhead, 14 in Liverpool, 11 in Sheffield, and 8 in West Ham. The deaths referred to measles, which had declined from 81 to 68 in the four preceding weeks, slightly rose to 77 in the week under notice, and caused the highest annual death-rates of 1·7 in Sunderland, 2·2 in Walsall, 2·6 in Stoke-on-Trent, 3·0 in Aberdare, and 5·0 in Dudley. The fatal cases of whooping-cough, which had been 53, 55, and 62 in the three preceding weeks, fell to 50; of this number 15 occurred in London, 6 in Birmingham, 4 in Liverpool, 3 in Manchester, and 3 in Hull. The deaths attributed to diphtheria, which had been 24, 34, and 35 in the three preceding weeks, declined to 31, and included 8 in Birmingham, 6 in London, 4 in Sheffield, and 3 in Nottingham. The deaths referred to scarlet fever, which had been 13, 17, and 20 in the three preceding weeks, fell to 15; 3 deaths were registered in St. Helens and 2 each in Birmingham, in Liverpool, and in Leeds. The fatal cases of enteric fever, which had been 9, 14, and 9 in the three preceding weeks, further declined to 7 in the week under notice, of which 2 occurred in London.

The number of scarlet fever patients under treatment in the Metropolitan Asylums and the London Fever Hospitals, which had steadily increased from 1418 to 1978 at the end of the six preceding weeks, had further risen to 2100 on July 26th; 346 new cases were admitted during the week, against 314, 315, and 357 in the three preceding weeks. These hospitals also contained on the date mentioned 885 cases of diphtheria, 290 of measles, 266 of whooping-cough, and 45 of enteric fever, but not one of small-pox. The 918 deaths from all causes in London were 17 in excess of the number in the previous week, and corresponded to an annual death-rate of 10·6 per 1000. The deaths referred to diseases of the respiratory system, which had been 106, 137, and 115 in the three preceding weeks, declined to 107, and were 4 below the number recorded in the corresponding week of last year.

Of the 3774 deaths from all causes in the 96 towns, 152

resulted from various forms of violence and 307 were the subject of coroners' inquests. The causes of 25, or 0·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in Manchester, Sheffield, Leeds, Bristol, West Ham, Hull, and in 69 other smaller towns. Of the 25 uncertified causes of death, 4 were registered in Birmingham, 2 in London, and a single case in each of 19 other towns.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns, with an aggregate population estimated at 2,259,600 persons at the middle of this year, 1068 births and 566 deaths were registered during the week ended Saturday, July 26th. The annual rate of mortality in these towns, which had steadily declined from 14·9 to 13·2 per 1000 in the three preceding weeks, further fell to 13·1 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these Scotch towns averaged 13·4, against 11·2 per 1000 in the 96 large English towns. Among the several towns the death-rates ranged from 7·1 in Leith, 8·5 in Clydebank, and 8·8 in Falkirk, to 14·7 in Glasgow, 14·9 in Hamilton, and 15·7 in Dundee.

The 566 deaths from all causes were 4 fewer than the number in the previous week, and included 64 which were referred to the principal epidemic diseases, against numbers declining from 89 to 61 in the three preceding weeks. Of these 64 deaths, 24 resulted from infantile diarrhœal diseases, 18 from measles, 15 from whooping-cough, 3 from scarlet fever, 2 from enteric fever, and 2 from diphtheria, but not one from small-pox. These 64 deaths from the principal epidemic diseases corresponded to an annual death-rate of 1·5, against 1·2 per 1000 in the 96 large English towns. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 21, 17, and 13 in the three preceding weeks, rose to 24 in the week under notice, and included 19 in Glasgow and 2 in Edinburgh. The deaths referred to measles, which had been 38, 27, and 28 in the three preceding weeks, declined to 18, of which number 16 were recorded in Glasgow. The fatal cases of whooping-cough, which had been 20, 16, and 11 in the three preceding weeks, rose to 15, and included 9 in Glasgow. The 3 deaths attributed to scarlet fever, all of which occurred in Glasgow, were slightly below the average in recent weeks. The fatal cases of enteric fever were registered in Glasgow and Greenock respectively, and those of diphtheria in Dundee and Kirkcaldy respectively. In addition to the above, a death from typhus was recorded in Glasgow.

The deaths referred to diseases of the respiratory system, which had been 71, 79, and 71 in the three preceding weeks, further declined to 63; 31 deaths resulted from different forms of violence, against 30 and 23 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the 27 town districts of Ireland, with an aggregate population estimated at 1,199,180 persons at the middle of this year, 699 births and 378 deaths were registered during the week ended Saturday, July 26th. The annual rate of mortality in these towns, which had declined from 16·7 to 15·2 per 1000 in the four preceding weeks, increased to 16·4 per 1000 in the week under notice. During the first four weeks of the current quarter the mean annual death-rate in these Irish towns averaged 15·9 per 1000; in the 96 large English towns the corresponding rate did not exceed 11·2, while in the 16 Scotch towns it was equal to 13·4 per 1000. The annual death-rate for the week was equal to 15·1 in Dublin (against 10·6 in London and 14·7 in Glasgow), 15·8 in Belfast, 25·2 in Cork, 12·7 in Londonderry, 19·0 in Limerick, and 19·0 in Waterford, while in the remaining 21 smaller towns the mean death-rate was 16·9 per 1000.

The 378 deaths from all causes were 29 in excess of the number in the previous week, and included 27 which were referred to the principal epidemic diseases, against 36 and 28 in the two preceding weeks. Of these 27 deaths, 15 resulted from infantile diarrhœal diseases, 5 from measles, 4 from whooping-cough, 2 from enteric fever, and 1 from scarlet fever, but not one from diphtheria or from small-pox. The mean annual death-rate from these diseases in the week under notice was equal to 1·2 per 1000, and coincided with that recorded in the 96 large English towns, while in the 16 Scotch towns it averaged 1·5 per 1000. The deaths of infants (under 2 years of age) attributed to diarrhœa and enteritis, which had been 9, 15, and 16 in the three preceding weeks, were 15, and included 6 in Dublin and 6 in Belfast. The deaths referred to measles, which had been 5, 4, and 4 in the three preceding weeks, were 5, and comprised 4 in Waterford and 1 in Newry. The 4 fatal cases of whooping-cough, of which 3 occurred in Dublin and 1 in Belfast, were slightly in excess of the average in recent weeks. The 2 deaths referred to enteric fever were registered in Belfast and Limerick respectively, and the fatal case of scarlet fever in Belfast. In addition to the above deaths a fatal case of typhus was recorded in Cork.

The deaths referred to diseases of the respiratory system, which had been 54, 52, and 56 in the three preceding weeks, fell to 41 in the week under notice. Of the 378 deaths from all causes, 119, or 32 per cent., occurred in public institutions, and 10 resulted from different forms of violence. The causes of 10, or 2·7 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest; in the 96 large English towns the proportion of uncertified causes of death during the week did not exceed 0·7 per cent.

THE SERVICES.

ROYAL ARMY MEDICAL CORPS.

THE undermentioned Majors are placed on retired pay (dated July 29th, 1913): Charles G. Spencer and Ernest M. Williams.

The undermentioned Lieutenants to be Captains (dated July 28th, 1913): John Gilmour, Wilfred W. Treves, John T. Simson, Campbell Robb, and Eric T. Gaunt.

Colonel W. W. Pike, D.S.O., has been appointed to officiate as Deputy Director of Medical Services to the Sixth (Poona) Division of the Southern Army in India during the absence on six months' leave of Surgeon-General T. M. Corker.

Lieutenant-Colonel R. Caldwell has taken up duty in the Southern Command on return from the South African Command. Lieutenant-Colonel G. H. Barefoot has been appointed to hold charge of the Queen Alexandra Military Hospital at Grosvenor-road, in succession to Lieutenant-Colonel J. Maher. Lieutenant-Colonel C. A. Lane has taken over charge of the Military Hospital at Madras. Lieutenant-Colonel W. T. Mould, senior medical officer at Fyzabad, has been granted three months' leave of absence. Lieutenant-Colonel J. B. Wilson has taken up duty as Senior Medical Officer at Jamaica, and has been appointed to command No. 29 Company Royal Army Medical Corps stationed at Up Park Military Hospital.

Major W. H. S. Nickerson, V.C., has been transferred from Rawal Pindi to Murree Cantonment. An exchange of position on the roster for service abroad has been approved between Major F. S. Walker, serving at Queenstown Harbour, and Major H. A. Davidson, stationed at the Curragh Camp, Kildare; the latter officer will now proceed abroad instead of the former. Major R. L. Argles stationed at the Military Hospital, Cork, has been placed under orders to embark for service in India about Sept. 12th. Major E. A. Bourke has been transferred from the Military Hospital at Chester to Carlisle. Major W. B. Winkfield has taken up duty at the Military Hospital, Meiktila, on transfer from Maymyo Cantonment, Upper Burma. Major H. Simson, surgical specialist at Poona Cantonment, has been appointed to hold charge of the Military Hospital at Muttra Cantonment. Major A. Chopping has been transferred from the Royal Herbert Military Hospital at Woolwich to Netley. Major J. Poe has joined for duty at Shorncliffe. Major L. L. G. Thorpe, serving at the Military Hospital, Cosham, has been placed under orders for a tour of foreign service. Major P. H. Collingwood has been transferred from Devonport and appointed to hold medical charge at Honiton Camp.

Captain G. S. Wallace has been transferred from the Military Hospital at Woking to Aldershot. Captain A. W. A. Irwin has joined at Cork. Captain C. E. L. Harding has been granted an extension of Indian tour of service for one

year. Captain H. Harding has been appointed to the Military Hospital at Colchester on relief at Great Yarmouth by Major C. W. Allport, returned to duty from leave of absence on medical certificate. Captain E. M. O'Neill has been transferred from the Military Hospital at Cork to Youghal. Captain C. F. White has been appointed Specialist in Dermatology and Venereal Diseases to the Dublin District, in succession to Captain A. T. Frost, whose tenure of the appointment has expired. Captain A. C. A. Amy has been granted seven months and 18 days' leave of absence home from India.

Lieutenant C. M. Finny has been appointed to the Second (Rawal Pindi) Division of the Northern Army in India for duty in the Murree Hills. Lieutenant P. Hayes has been transferred from the Military Hospital at Wellington, Madras Presidency, to Bangalore cantonment. Lieutenant E. C. Deane has been appointed to hold medical charge at Ross Camp on transfer from the Military Hospital at Carlisle.

INDIAN MEDICAL SERVICE.

Lieutenant-Colonel C. N. C. Wimberley has arrived home on leave of absence from India. Lieutenant-Colonel A. Coleman, civil surgeon, has been appointed to Rawal Pindi on return from leave of absence. Lieutenant-Colonel B. B. Grayfoot has taken up duty as Assistant-Director of Medical Services to the Derajat and Bannu Brigades, in succession to Colonel D. J. D. Grant, transferred. Lieutenant-Colonel J. G. Hulbert, on completion of special duty at Kasauli, has been appointed Civil Surgeon at Muttra.

Major W. E. McKechnie, civil surgeon at Etawah, has been appointed to Bhim Tal and placed on special duty. Major D. H. F. Cowen, second class civil surgeon, has been selected for appointment as Medical Adviser to the Maharajah of Patiala and Patiala State, in succession to Lieutenat-Colonel C. H. James, appointed Civil Surgeon at Simla. Major J. J. Urwin has arrived home on leave of absence from India. Major W. Lapsley, civil surgeon at Azamgarh, has been transferred to Bahraich in the same capacity. The leave of absence granted to Major E. L. Ward, superintendent of the Central Jail at Unnjab, has been extended for a further period of six months.

Captain H. M. H. Melhuish has been appointed Plague Medical Officer at Rohtak. Captain C. C. Jolly has arrived home on leave of absence from India. Captain V. B. Nesfield, civil surgeon at Bijnor, has been transferred to the United Provinces of Agra and Oudh, and appointed to officiate as Chemical Examiner and Government Bacteriologist. Captain C. S. Poe has been appointed to the substantive medical charge of the 108th Regiment of Native Infantry. Captain G. T. Davy has taken up duty as Specialist in the Prevention of Disease. Captain J. Smalley, on return from leave of absence, has been appointed Civil Surgeon at Kanwar, in succession to Captain J. L. Lunham. Captain N. M. Wilson has been appointed Civil Surgeon at Dera Ghazi Khan, in succession to Captain R. J. Wells, appointed to be Deputy Sanitary Commissioner to the Punjab Government. Captain H. C. Buckley has been transferred from Basti to Muttra and appointed to officiate as Civil Surgeon. Captain N. M. Robson has been appointed Specialist in Mental Science. The services of Captain R. A. Lloyd have been placed at the disposal of the Government of the Central Provinces.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

The undermentioned Lieutenants to be Captains:—Gordon R. Ward (dated July 8th, 1913), George E. Shand (dated July 20th, 1913), and Sidney J. Steward (dated July 28th, 1913).

The undermentioned to be Lieutenants (on probation):—Robert Montgomery (dated July 11th, 1913), and Cadet Sergeant William Ashley Lethem, from the Edinburgh University Contingent, Officers Training Corps (dated July 20th, 1913).

TERRITORIAL FORCE.

Royal Army Medical Corps.

3rd Highland Field Ambulance, Royal Army Medical Corps: Captain John Tait, from the List of Officers attached to Units other than Medical Units, to be Captain (dated July 12th, 1913). Captain John Tait is appointed to act as Transport Officer (dated July 12th, 1913).

2nd London (City of London) Field Ambulance, Royal Army Medical Corps: Lieutenant Leslie Rawes, from the 3rd Wessex Field Ambulance, Royal Army Medical Corps, to be Lieutenant (dated July 9th, 1913).

3rd South Midland Field Ambulance, Royal Army Medical Corps: David Wylie Rintoul (late Cadet, St. Andrews University Contingent, Senior Division, Officers Training Corps), to be Lieutenant (dated June 1st, 1913).

Sanitary Service: Major David Smart to be Lieutenant-Colonel (dated March 20th, 1913).

Attached to Units other than Medical Units.—Lieutenant Herbert E. Corbin to be Captain (dated May 20th, 1912). Captain Robert W. Forrest to be Major (dated June 24th, 1913).

For Attachment to Units other than Medical Units.—John Molyneux Hamill (late Lieutenant, 4th London Brigade Company, 2nd London Divisional Transport and Supply Column, Army Service Corps), to be Lieutenant (dated August 6th, 1913).

MEDICAL PRACTICE UNDER THE INSURANCE ACT.

(BY OUR SPECIAL COMMISSIONER.)

(*Continued from p. 267.*)

XVIII.—SALFORD AND THE POOLING SYSTEM.

THOUGH the pooling system which I described in my last article originated in Salford, it is not so popular there as in Manchester. It was established in Salford in January of this year, but after a test lasting only three months it was found wanting. The doctors on the list only received 56 per cent. of the amount which the Local Medical Committee certified they were entitled to claim. The work since May, it is true, has been much less, so it is anticipated they will obtain a large proportion of their claims. Though so close to Manchester as to seem one and the same city, Salford has an absolutely separate administration, and it has an Insurance Committee and a Medical Committee of its own. Here, as at Manchester, the National Insurance Act, when its provisions were disclosed, was viewed with great hostility. Before the climax, when resistance was abandoned, there were only 17 out of 90 Salford practitioners who were willing to work the Act. Then when the hope of fighting the Act was abandoned many practitioners went on the panel very unwillingly. They said they would get what they could out of it, but were not going to work to make the Act a success, and to-day many of these practitioners are giving a lukewarm service which it will take a great deal to convert into the zealous devotion which a national measure for the prevention of disease, if planned with knowledge and discretion, should and would have commanded. There was at first great hostility between members of the profession over the Act; then the adoption of the pooling system was expected to unite all parties, but the hope was not realised. At first it appeared as if peace might ensue, but now that the pool at Salford has not yielded the results expected the profession is again divided against itself, some being in favour of abandoning the pool, others, on the contrary, desiring to give this system a longer trial. Last April at Salford 38 out of 134 practitioners (a figure that includes several doctors living outside Salford) on the list or panel left, and five or six new practitioners came on. Several of the practitioners who resigned were among those who did not live at Salford, and left because they found it did not pay to have their names on the list. Other practitioners have written their names down on five or six panels, and have now withdrawn from those panels where they found little to do. From five to ten Salford practitioners definitely left the panel because, after giving the Act a trial for three months, they objected to the system and determined to wash their hands of all contract work.

Abuses under the Pooling System.

A dismal conclusion has been arrived at by many at Salford, and to a certain extent was forced upon me when inquiring into the working of the pooling system. It seems certain that, in spite of the care taken by the Local Medical Committee to watch over the medical practitioners and prevent abuse, there undoubtedly are practitioners who are not easy to control, and whose methods of practice need revision. Taking all the patients and all the illnesses

occurring during the first quarter at Salford, each patient has been attended on an average 5·6 times either for consultations or visits. If a practitioner finds that his average number of attendances on each patient is only four, he may be tempted, say the critics, to raise his average nearer to the general average the next time he makes up his accounts. Then it is observed that there are some practitioners who like to see their patients oftener than others, and it is clear that no pressure from an Insurance Committee should interfere here; different men must be allowed to have different methods. Also, under the pooling system, the practitioner has no interest in preventing malingering and the encouraging of patients to call often has, it is stated, worked unfairly for the dispensing chemists. So large has been the quantity of medicine prescribed that at one time the Salford chemists, I was told, were anticipating receiving only 46 per cent. of what was due to them according to the tariff. This would not pay for the material used, to say nothing of the trouble. But statements of this kind must be accepted with caution. Thus at Manchester it was also stated, and reported in some papers, that the dispensing chemists only received 50 per cent. of the sums due to them. In a sense this was quite true. Before the accounts were examined an instalment of 50 per cent. on the sums they claimed for the first three months was paid. But as soon as the accounts are checked the Insurance Committee will pay up to 90 per cent. of the amount available. Thus the chemist may not be so badly off after all; and, indeed, both chemist and medical practitioner must wait till the accounts of an entire year have been completed before they can really know what they have earned.

The Medical Committee as the Centre of Action.

At Salford, as at Manchester, the present Local Medical Committee was elected long before the British Medical Association agreed to oppose no longer the working of the Act. Consequently both these Committees were against the Act. Thus they refused to elect anyone on the Salford Medical Committee who had pleaded openly in favour of the Act. When, however, the pooling system was sanctioned, the two Committees took a more favourable view and set about to make the best of the law. But the critics and opponents of the Act are now in power, and this has practically silenced those who, from the beginning, were supporters of the Insurance scheme. If to-day they suggest changes it looks as if they are opposing what they had advocated. Thus the recent hostility that divided the profession is working itself out in a somewhat topsy-turvy manner. Only the enemies of the Act are administering the Act, and many of those who all along pleaded in its favour have nothing to do with its practical application. Dr. J. H. Taylor was put on the Salford Insurance Committee by the Insurance Commissioners and not through any action taken by his medical colleagues. With the collaboration of Mr. Comyns Carr and Mr. Stuart Garnett, Dr. Taylor is the author of a well-known book on National Insurance which has been favourably reviewed in THE LANCET, and which has now reached its fourth edition, and it is a good thing for the medical profession that the services of a person so exceptionally well informed on the entire subject should be at their disposal.

Quick Change of Medical Attendant.

Notwithstanding the efficacy of the Medical Committee as the mouthpiece of the profession, there is a strong, though far from unanimous, feeling that this does not suffice. Both at Manchester and at Salford the impression prevails that national insurance and the accompanying medical service are still in the melting-pot. Having suffered for want of organisation, the medical profession, in the event of another struggle, would act with greater discipline and show a more united front. But it is objected that all this is more or less vague, and consequently a genuine medical trade union will sooner or later have to be formed.[1] There is no other fighting machine capable of dealing with the questions at issue. For instance, at Manchester I was assured that there is a practitioner who is actually making £3000 a year out of the working classes. This man has no rest from morn till night. He is absolutely a slave to his work. To pay 160 visits in a day is not to serve the cause of science; it is merely to display the tactics of underselling which trade unions prevent, whatever faults may be put down to them, rightly or wrongly. Thus it is possible for the medical profession to be degraded in spite of the pooling system which was attempted at Salford and is still applied at Manchester. Yet in both places the Local Medical Committees, composed of panel and non-panel doctors, are working very amicably, and their relations with the Insurance Committees have throughout been exceptionally good. The "doctors on the list," having no list, depend on their popularity for their patients, and are therefore not likely to be inattentive. This is undoubtedly a great advantage to the patient, who can change his medical adviser whenever he pleases, whereas under the capitation system it may take a year to do this. But it lends itself to abuse on the part of the practitioner, who is thus tempted to be too lenient towards his patient. In Manchester the belief prevails that the Medical Committee can more readily check such abuse under the pool system than under the capitation system, while at Salford the opposite opinion was expressed to me. Strange to say, however, in reverting to the capitation system at Salford the facility of changing medical attendants, which is one of the principal features of the pool system, will be maintained under the capitation system. At Salford the insured person will be able to take his red card to whomsoever he pleases. The newly selected panel doctor only needs to initial the card, and the card may bear an unlimited number of initials. The card seems to serve only for the purpose of showing the newly selected medical attendant that the patient has been elsewhere. The second doctor may then, according to the old-established etiquette, write to the first doctor, but in the rough-and-tumble practice arising from the Insurance Act this is rarely done. This quick-change system is not allowed by the Regulations issued under the Insurance Act, but it is being quietly tolerated. It is said that it can do no harm, yet it does encourage malingering, because the patient can go from one doctor to another until he finds someone who will sign his certificate of illness. It also encourages doctors to tout for patients. But the Insurance Commissioners seem to have thought it better to let doctors and patients do whatever they preferred, the great thing being to avoid friction as far as possible, especially in the early working of the Act.

"Sweating" under the Act.

In Salford there are practitioners who attend on 80 to 100 insured persons per diem and have a private practice as well. I met very many doctors, as well as members of the public, who think that this is, or may be, a dangerous scandal and should be prevented. Some of these practitioners plead that they are employing an assistant, but the Salford Insurance Committee has considered the advisability of refusing to pay its panel doctors unless they attend personally on their patients. The insured person at the present time might select a firm, and the firm could employ assistants. Even though the firm place the assistant's name on the panel, he would not be paid as a panel doctor, it is said, but would only receive a fixed salary from the firm. It is a fact that assistants in some cases are doing the work, while the firm who employ them are getting the bulk of the money. The assistant sometimes only gets a quarter of what he is earning. This is the real, genuine sweating system. The word "sweating" has been much misused of late and is often taken to mean merely a very low rate of payment. Doubtless the sweating system does lend itself to the payment of very small wages, but that does not necessarily follow, and I have known very good wages paid by the sweater to his employees. Sweating means that the worker is not directly employed by the person who has need of his work, but by an intermediary who "sweats" a profit, a middle man's profit, out of the transaction. Where an insured patient requiring medical advice applies to a medical man or a medical firm, and instead of being attended by the person summoned is attended by an assistant, sweating occurs. This is a very grave question, and the profession must decide whether it will allow the sweating system to be installed under the Insurance Act, even though in this way quick and fairly well-paid employment is forthcoming for the younger medical men. For there is here no question of getting the services of a good assistant cheap; such services are now far too valuable to be obtained at a low price. But if the community is taxed so that the

[1] Since this article was written I see that the British Medical Association have definitely declared themselves opposed to any transformation of the Association into a trade union.

medical practitioner shall receive 7*s.* a year for every insured person on his list, there is good reason why this sum should be considered not too large for the work expected. But if a firm takes half or even a larger part of the 7*s.* for doing nothing more arduous than employing an assistant and providing premises and an established name, the wider object of the Act will be jeopardised.

Practice among the Poor.

Both at Salford and Manchester, as elsewhere, I found some medical practitioners were satisfied and some were not. It is those who have a large working-class practice who are deriving the greatest advantage, while those whose patients live in residential districts often stand to lose. As there are not many well-to-do residents at Salford, the practitioners of this borough have not lost much. Indeed, there are not many insured persons in Salford whose income exceeds £100 a year, so that the question of establishing a wage-limit has not been raised before the Insurance Committee. Many of the patients at Salford who used to pay fees only paid at the rate of 6*d.* a week. A collector had to be employed and a percentage of the money was given to him; and it sometimes took a year or more to liquidate a bill.

At Salford there are a considerable number of uninsured persons, dependents, and very poor people with whom great difficulties arise. Formerly many of them used to frequent the provident dispensaries that still exist at Manchester and at Salford, but some of their branches have been closed. The best members, the best lives and the least poverty-stricken of the subscribers, have become insured persons. Those that remain are aged women and children, and it is doubtful whether sufficient means will be found to assist them. The medical practitioners so far have been very successful in resisting the efforts made to resuscitate the old club system on behalf of the non-insured. Many plans have been prepared and promoted to establish clubs for women and children at a much lower contract price than that established by the Act. So far medical resistance has been successful, and the profession is more united on this than on any other question. But the situation nevertheless requires a great deal of watching.

(To be continued.)

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

National Health Insurance: Payment of 50 Per Cent. for Last Quarter.

ON July 29th the Manchester Medical Committee decided to pay on account 50 per cent. of the doctors' bills for the last quarter. The sum to be disbursed is £18,782. As there are 255 medical men on the panel, the average per medical man works out at about £73 10*s.* each. The final draft of the scheme for dealing with tuberculosis was approved. The scheme provides for dispensary, domiciliary, hospital, and sanatorium treatment; this, with the improvement of the Hardman-street dispensary, enlarging the hospital at Baguley, and taking over the Abergele sanatorium, will cost £35,000.

Hospital Sunday Fund.

During the past year £3100 was collected for the medical charities of Manchester and Salford. The committee has appropriated this sum as follows: Royal Infirmary, £775; St. Mary's Hospitals, £379 15*s.*; Children's Hospital, £330 15*s.* 11*d.*; Ancoats Hospital, £304 19*s.* 3*d.*; Sick Poor and Private Nursing Institution, £219 6*s.* 6*d.*; Hospital for Consumption, £213 12*s.* 2*d.*; Salford Royal Hospital, £212 3*s.* 9*d.*; Royal Eye Hospital, £154 6*s.* 5*d.*; Hospital for Incurables, £126 3*s.* 11*d.*; Victoria Memorial Jewish Hospital, £95 4*s.* 7*d.*; Hospital for Skin Diseases, £85 12*s.* 1*d.*; Northern Hospital, £79 11*s.* 4*d.*; Ear Hospital, £41 8*s.*; Dental Hospital, £22 5*s.*; and the balance to several smaller medical charities.

Objections to a Proposed Sanatorium at Marple.

A Local Government Board inquiry was held in Salford on July 28th into the corporation's application to borrow £2140 to purchase land, Nat Top Farm, at Marple, whereon to build a hospital or sanatorium for the treatment of patients suffering from tuberculosis. The application was made under the provisions of the National Insurance Act. It was stated that at a subsequent date the Local Government Board would be asked to grant permission to build a hospital on the site at a cost of £15,000, in which at the outset 100 beds would be provided, the site comprising about 52 acres, 42 of which would be used for hospital purposes. It is proposed to take only those patients who are in the early stages of tuberculosis, and who would really benefit from the treatment. The Salford authorities contended that the site was very suitable, and that there would be no danger to the residents at Marple. Very strong statements concerning the probable injury to the district and the danger to public health were made by several witnesses for the Marple urban district council. It was, in addition, alleged that the site was unsuitable for a sanatorium. The inspector intimated that he proposed to visit the site before reporting.

August 5th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Teaching of Clinical Medicine in Edinburgh.

AS the result of recent conferences between the University Court and the managers of the Royal Infirmary the arrangements for teaching clinical medicine are to be materially altered. The Court is to appoint a professor of clinical medicine, and when the chair of materia medica falls vacant the wards hitherto under the charge of this professor, *ex officio*, are to be allotted to a professor or professors of the University. The four senior ordinary physicians are to be appointed "senior lecturers in clinical medicine in the University," with academical status, and are to act as examiners in clinical medicine for University degrees. The assistant physicians to the institution are to be appointed "University lecturers in clinical medicine," and to them will be allocated a definite part of the teaching in the wards. This is probably the most marked step for the better, as up to now the junior teaching has been a very poorly organised unit in the system. Finally, to each medical ward will be allocated a "University clinical tutor," whose duty it will be to assist in the teaching of "side-room work" in its widest aspects. These tutors will keep in touch with patients by acting as assistants in the out-patient department. To coördinate the whole system the professors and senior lecturers will form a "clinical medical board," which will supervise the arrangements and be responsible for the teaching of clinical medicine. It is proposed to organise the surgical side on much the same basis, with a clinical surgical board to direct the teaching as a whole. The gynæcological department is in future to form a separate unit on the same basis as the medical and surgical sides. As regards the appointments to the staff—viz., assistant physicians, surgeons, and gynæcologists—the board of managers of the infirmary is to form a selection committee from its numbers, consisting of two University representatives, one from the College of Physicians, one from the College of Surgeons, and three other members of the board. By this committee two candidates will be selected and their names submitted to the whole board for final appointment. In this way, although the ultimate selection of a candidate remains, as it should, with the governing body of the institution, the most suitable applicants are previously noted by a small, well-qualified committee.

Establishment of a Pathological Institute in Edinburgh.

It has been decided that during the period of office of the present pathologist to the Royal Infirmary (Dr. Theodore Shennan) the professor of pathology shall be appointed consulting pathologist to the institution, and that his opinion is to be at the service of any member of the staff when a pathological investigation is required. He is also to be responsible for the courses of instruction in pathology required for students, and will, subject to existing rights, have access to the material of the pathological department as required for teaching or purposes of research. Dr. Shennan is appointed lecturer in morbid anatomy. To provide for the increased laboratory accommodation required extensive alterations are to be undertaken at the expense of the University. There is as yet no information as to what part the newly appointed professor of bacteriology will take in the scheme, but this will doubtless soon follow. This coöperation between the systematic teaching of pathology, the pathological centre of

the hospital, and the wards will doubtless strengthen the teaching of pathology very considerably and ensure that the material is applied to the best purposes, whether teaching or research.

Post-graduate Teaching in Edinburgh.

The course on diseases and defects of children, with additional demonstrations on special branches, including methods of medical inspection and mental defects, for which three clinics were held at the Institution for the Education of Imbecile Children at Larbert, was held during the last fortnight of July. The needs of medical inspectors of school children were specially kept in view, and the course was well attended. A course on internal medicine will be held during this month, and during September there will be a general course, a surgical course, and two special courses, one on the diseases of the ear, nose, and throat, and one on the surgical diseases of the genito-urinary tract. Particulars may be had from the Secretary, the Faculty Office, University New Buildings, Edinburgh. Accommodation may be had during September in one of the residences of the University Hall, and the University Union will be open for temporary members during August and September.

Nairn Hospital; Annual Report.

At the annual general meeting of the supporters of the Nairn Town and County Hospital held on July 31st the medical report was read, which stated that during the year 163 indoor patients and 26 outdoor patients had been under treatment; in all, 189 patients, as compared with 162 the previous year. The subscriptions for the year were £194 10*s.* 6*d.*, as compared with £122 19*s.* 3*d.* last year. The total income was £575 0*s.* 11*d.* and the total expenditure £687 6*s.* 9*d.* A gift of £100 was reported to the capital fund; also a gift of chairs for the patients and of a £10 10*s.* donation. On the motion of the chairman, Dr. B. Cruickshank was unanimously appointed consulting medical officer in charge of the house, in place of the late Dr. A. Sclanders, whose long and faithful services rendered ungrudgingly to the hospital for upwards of 50 years were recorded in the minutes. Dr. Cruickshank has been connected with the hospital for 36 years.

Sanatorium for North-East Counties.

The draft of the proposed heads of agreement between the counties of Aberdeen, Kincardine, Elgin, and Nairn for the purpose of erecting and maintaining a sanatorium on a suitable site for the treatment of the earlier and more curable cases of tuberculosis, provides for 70 beds at the sanatorium, to be allocated as follows:—County of Aberdeen, 40 beds; Kincardine, 10; Elgin, 17; Nairn, 3. The cost would be borne in similar proportion, and the management would be in the hands of a joint committee, with power to appoint a clerk (who might also be treasurer), a medical superintendent, and other officers. On the basis of the opinion expressed by the Departmental Committee that it was advisable to provide in the near future 1 bed per 5000 of population in the United Kingdom, there would have been 49 beds, but the representatives of the four counties felt that that estimate was too low. In a report to the Aberdeen town council it is noted that the combination would not necessarily preclude the city of Aberdeen from joining it. The scheme by the Aberdeen town council, presented in March, cannot be accepted by the county authorities; but they are willing to confer further with regard to the scheme contained in the heads of agreement submitted on behalf of the representatives of the counties of Aberdeen and Kincardine.

August 5th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Election of Professor of Anatomy in the Royal College of Surgeons.

AT a special meeting of the Council of the Royal College of Surgeons in Ireland Dr. Evelyn John Evatt was appointed professor of anatomy, in succession to Professor A. C. Geddes. Dr. Evatt, who is the eldest son of Captain C. A. Evatt, R.N., Smithborough, co. Monaghan, is in his forty-fifth year. He has spent many years in India. He was demonstrator of, and subsequently lecturer on, anatomy in University College, Cardiff, many years prior to his appointment as professor of anatomy in the University of Manitoba, and has had a distinguished scientific career, especially on the side of embryology.

Dispensary Doctors as "Medical Advisers."

Inasmuch as several recently appointed medical advisers under the National Insurance Act are dispensary doctors, the Irish Medical Association sent a deputation to the Local Government Board to have the position of the medical adviser clearly defined. The President of the Association, Dr. Storey, pointed out the incompatibility with efficient discharge of the duties of the dispensary medical service of the duties of medical advisers in certifying for sickness benefit outside their own districts. An insurance certifying officer for a whole county must necessarily go outside his own district. The deputation asked whether such an arrangement was permissible under the Medical Charities Act. The Vice-President of the Local Government Board, in reply, quoted from the annual report for 1911–12, to the effect that medical officers or their responsible substitutes must hold themselves always in readiness for duty and be available within easy reach when their services are called for by their patients. A medical officer who absents himself from his district to the serious inconvenience and neglect of his dispensary patients is guilty of grave dereliction of duty, and is liable to removal from office. The Vice-President said that he would point out to the Insurance Commissioners the difficulties and dangers of employing dispensary doctors outside their own districts, and would ask them to confine therein the certifying work of the dispensary doctors.

Irish Practitioners and the "Medical Advisers."

At a general meeting of the medical profession in Ireland, held in the Royal College of Surgeons, the following resolution was passed unanimously:—

That in the opinion of this meeting no person should be elected a member of the General Medical Council who has accepted the post of medical adviser under the National Insurance Act.

In direct opposition to this resolution the authorities of the Apothecaries' Hall at their annual meeting a few days later elected Colonel F. G. Adye-Curran, M.D., who had accepted such a post, as their representative on the General Medical Council. Thereupon Dr. J. C. McWalter, who was appointed governor of the Apothecaries' Hall at the same meeting, realising the impossibility of the profession in Ireland preserving a united front in the present crisis if an institution like the Apothecaries' Hall were to ignore the wishes of the Irish practitioners, immediately resigned the office to which he had just been appointed.

The Swanzy Memorial.

A public meeting was convened by the Lord Mayor of Dublin, the Lord Chancellor of Ireland, the Earl of Pembroke, the Earl of Meath, Viscount Monck, Viscount Ardilaun, the Right Hon. W. D. Andrews, Mr. W. M. Murphy, President Chamber of Commerce, Mr. James Henry, President Incorporated Law Society, Professor C. E. Fitzgerald, President Royal College of Physicians, Ireland, and Dr. R. D. Purefoy, President Royal College of Surgeons, Ireland, in the Royal College of Surgeons, Dublin, on July 3rd, when it was unanimously resolved that the permanent memorial to the late Sir Henry R. Swanzy should take the form of completing the Royal Victoria Eye and Ear Hospital, to the foundation and construction of which he devoted the best years of his professional life. About £12,000 will be required to attain this object. Subscriptions should be sent to the honorary treasurers, Swanzy Memorial, Royal Victoria Eye and Ear Hospital, Dublin. Cheques should be crossed "Royal Bank of Ireland."

Belfast District Asylum.

The eighty-third annual report of this institution for the year 1912, just issued, shows that the admissions during the year were 262 (128 males and 134 females), being 29 more than in 1911. Dr. W. Graham, the medical superintendent, is a strong advocate of the prevention of mental diseases, and greatly approves of the psychopathic hospitals which have been erected on the continent, where a sharp watch is kept on persons who show early signs of mental aberration, and where methods of a helpful nature are applied for their relief. He discusses the three potent causes or associated factors of insanity—viz., heredity, mental stress, and toxic products, and while he is evidently much influenced by Professor Freud's psycho-analytic method of piercing to

the source of obscure mental troubles, his report would have been more convincing had he given us some evidence of what is the physical basis of mental diseases as seen in morbid changes in the nervous system. The gross expenditure for the year was £29,442 2*s.* 2*d.*, which after deducting receipts from paying patients and miscellaneous sources gives the net capitation of £21 18*s.* 10*d.* per annum.

The Health of Belfast.

The report of the medical officer of health, presented to the Belfast corporation at their usual monthly meeting on August 1st, indicated for the month under review, June 15th to July 12th, a decrease in typhoid fever, but an increase in the number of infectious diseases generally, this being due to scarlet fever, of which 162 cases were notified out of a total of 201 cases of infectious disease. The long continued prevalence of scarlet fever in Belfast demands some explanation.

August 5th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Determination of Pregnancy.

A NEW method of determining the presence of pregnancy, by Professor Abderhalden's procedure of dialysis, has been for some time under investigation at the Clinique Tarnier. The examination of the serum of 31 pregnant women gave a uniformly positive result. The period of gestation seems to exercise no influence on the intensity of the reaction. On the other hand, in 27 non-pregnant women a positive result occurred nine times. While the finding of positive results in non-pregnant cases precludes Abderhalden's reaction from being accepted as a sure diagnostic method, the constancy of its occurrence in pregnant women shows it to be due to a modification in the blood serum which is worthy of study. M. Delbet, discussing this communication at the Académie des Sciences on July 15th, remarked that the constancy of a positive reaction in the pregnant woman might prove of use, for in the absence of a reaction a diagnosis of pregnancy could be rejected.

The War on Flies.

M. Hennion, Prefect of Police, is causing to be distributed throughout France half a million copies of a circular disseminating information how to preserve food from contact with flies, to prevent their ingress into dwellings, to destroy those that gain access, and to prevent their birth and reproduction. Four hundred thousand of these circulars are being distributed among the pupils of the public schools of Paris and the suburbs. The remaining 100,000 will be sent to the heads of large lycées, colleges, and various kinds of establishments. Large illustrated posters have also been put up in Paris and the provinces. The coloured pictures representing the house-fly greatly magnified and its eggs and larvæ on a garbage heap are exciting a lively curiosity.

The Defence Against Tuberculosis.

M. Robin, in a lecture at the Académie de Médecine on July 15th, said that the defence of society against tuberculosis must embrace simultaneously a twofold aim, the defence of the individual as well as of the collective *milieu*. As regards the first, the individual must be protected against the risk that comes from himself—inherited predisposition, excesses of all kinds, &c.—and against that coming from outside, viz., contagion. With respect to the second, society must be protected by the protection of those of its members who are not affected, by the defence of the community at large against those who are tuberculous, and by the discharge of those duties imposed on the whole towards its affected members who are not in a position to care for themselves and to sustain their families. One of the most frequent causes of the transmission of tuberculosis, he said, was the shaking out (*agitation*) of linen, more particularly of the pocket handkerchiefs, of phthisical persons, soiled with the sputum and dried in the room. This cause played a more important part in regard to contagion than the brushing of clothes. The danger of these manipulations disappeared about the fifteenth or the twentieth day if desiccation was complete, but was prolonged if the linen was kept moist, desiccation seeming to destroy the virus.

The Treatment of Club Foot.

On July 28th M. Lucas-Championnière displayed at the Académie des Sciences a series of radiographs to show by the ultimate results the value of his operation of ablation of all the tarsal bones, which renders possible the perfect straightening of club foot in its most complicated as well as its most simple forms. This operation has the advantage of rendering unnecessary all forms of orthopædic apparatus and of secondary operation, and, notwithstanding the very great destruction of bone, leaves a foot that is solid as well as straightened. But when the operation has been performed on the very young, important bony nuclei are observed after a considerable lapse of time, which contribute markedly to the solidity of the skeleton of the foot, and thus encourage the performance of the operation in young subjects, even when the deformity is less severe; for in such cases early operation leaves a strong member in which none of the soft parts have to undergo diminution or severance, and for which no apparatus is necessary. The facility with which new bone is reproduced in young subjects and the fact that the excision of the tarsal bones is always incomplete in them explain the great difference in the results of the operation in the adult and in children.

August 4th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

The Lupus Institute.

THE annual report of the Lupus Institute for the year 1912 was published a few days ago, and the following particulars are taken from a paper contributed by Dr. Tungmann, the clinical director. Up to the end of 1912 no fewer than 2061 patients suffering from lupus applied for advice. As the institute has been in existence for only a little over three years, these figures show that it was urgently needed. With respect to the nationality of the patients, 18 per cent. came from abroad, including some from very distant countries such as Australia, Japan, and Brazil. Over 75 per cent. either recovered completely or improved in a satisfactory degree under treatment. It is not so very long since lupus was regarded as hardly curable, and the better prospects now open to patients are due chiefly to the energetic efforts of a few men, amongst whom Professor Lang is one of the oldest pioneers. Of the cases of lupus 561 were treated by excision and extirpation of the disease with permanently successful results, and the Finsen light was applied in 605 cases, with 61 per cent. of permanent recoveries, whilst the remaining patients have to return now and then for a fresh application of the light. The amount of trouble, time, and energy required from both the patients and the nursing staff for the treatment of lupus by these methods may be judged from the facts that 211,622 exposures to the Finsen light were given in the institute until the end of 1912, while during the same period 935 patients received 8063 exposures to the X rays, and 615 patients were treated with 11,764 applications of radium, the majority being of long duration. This latter method of treatment is making good headway as one of the most satisfactory remedies for bringing about permanent recovery from lupus, and several demonstrations proving its efficacy have been given before various medical societies. The Lupus Institute was formerly an annex to the skin department of the General Hospital in Vienna, but by long-continued and persevering efforts Professor Lang succeeded in inducing the Government to carry out his project of raising it to the position of an independent first-class establishment, which is now entering on the fourth year of its admirable work.

Health of the Working Classes in Vienna.

The union of working men's sick clubs in Vienna comprises about 420,000 members, who are attended in sickness by a large number of duly appointed general practitioners assisted by specialists for all classes of disease. The reports of this union are therefore very instructive as regards social medicine and the general standard of public health. The statistics for May, 1913, show that 9535 members were incapacitated for work by reason of illness, and must therefore, according to the conditions specified in the regulations, have been ill for at least three days. Of these patients, 936

(nearly 10 per cent.) suffered from tuberculosis of the lungs and upper respiratory organs, and 841 from other diseases of these organs, 588 suffered from acute tonsillitis, 43 from pneumonia, 196 from influenza, 336 from diseases of the circulatory system, 625 from affections of the alimentary canal, 605 from rheumatism, and 1776 from accidental injuries received in the course of their employment. It is further mentioned that 318 patients succumbed to their diseases, of whom over 40 per cent. (127) died from tuberculosis and 8 per cent. from other diseases of the respiratory system. Of the deaths under other headings 15 per cent. were due to diseases of the circulatory system, 8 per cent. to tumours, and 3 per cent. to injuries, an equal number ending their life by suicide.

The Mortality from Small-pox in Austria and in some other Countries.

Replying to antivaccinationists who have asserted that the effect of vaccination upon public health and the mortality figures is insignificant, Dr. Roesle has undertaken the task of analysing the figures dealing with this problem published in official reports of the respective boards of health. For Austria the following data are official. From the year 1886 to 1890 there died from small-pox 10,163 persons, or 434 per 1,000,000 inhabitants. In the next quinquennial period (1891–95) the figure fell to 4484, or 180 per 1,000,000. It dropped further still within the next five years (1896–1900), being 1927, or 45 per 1,000,000 inhabitants, and continued to diminish rapidly, so that, for instance, in the year 1906 only 39 cases of fatal small-pox occurred, or about 1·5 per 1,000,000. The decline was maintained during the subsequent years, reaching the lowest figure in 1910, when only 5 persons succumbed to this disease, or 0·2 per 1,000,000. The rapid fall in the mortality from small-pox is coincident with the system by which vaccination has been made semi-compulsory in this country, the principle followed since 1888 being that applicants for Government appointments—teachers, officers in the army, and many other classes of the population—have to be provided with certificates of vaccination; all recruits joining the army and all school children are vaccinated without exception, unless they have had the operation performed within the last five years. Thus it has come about that in a few years, without actual compulsion, but by indirect pressure, the population has been thoroughly vaccinated. Hence in 20 years the mortality fell from 10,163 to 39 fatal cases. Only in 1910, when a small epidemic broke out in an inconsiderable number of towns, a few persons succumbed (64) in Vienna. If these figures are compared with France or with the north of Italy, where there is a more or less disguised compulsion, or with England with its conscientious objectors, the favourable position of Austria is at once visible. In the southern provinces of Italy, where there is no compulsion in any form, nearly 2000 persons died from this cause in the years 1905–09, whilst in the north, where compulsion had begun to tell, less than 500 victims occurred. In England, after the concession of the "conscientious objection," there died during the period 1902–04 more than 4700 persons from small-pox. It is, therefore, clear that universal compulsory vaccination is indispensable for all nations who want to keep down small-pox.

August 4th.

CONSTANTINOPLE.

(FROM OUR OWN CORRESPONDENT.)

Water-supply of Jerusalem.

THE following interesting details concern the water-supply of Jerusalem. A number of years ago a generous English lady offered the Ottoman Government a large sum of money for the restoration of the ancient aqueduct of King Solomon. The Turks, however, did not take advantage of this offer, and the city remains up to the present without proper water-supply. The available sources are known to be contaminated and are frequently the cause of various infectious diseases, especially of cholera and typhoid fever. The need of an adequate supply of good water for Jerusalem can be gathered from the fact that during 1907, which was exceptionally poor in rain water, people had to pay as much as 6 francs for a cubic metre. The complete restoration of the Solomon aqueduct, which is 12½ kilometres long, would cost 2,000,000 francs. Another plan would be to carry a canal from the so-called Utrus source of Ain Far'a, 10 kilometres north-east from Jerusalem, but nothing has been done regarding it, while the attempts to bore artesian wells have also proved unsatisfactory, so that Jerusalem has to rely for its water-supply solely upon the system of cisterns. Rain in Jerusalem continues for about five or six months, from November to April. There are in Jerusalem approximately 56 rainy days per year. The rain water is gathered from roofs and street gulleys into subterranean reservoirs called cisterns. In Jerusalem there exist about 40 different types of cistern. One of the most interesting types is the so-called "tomb-cistern," which dates from the Roman occupation. These cisterns are small, but pretty frequent. Investigation seems to show that they were used originally by the Romans as places of burial. Not less interesting are the "bottle" cisterns. These, too, are small, of a more or less oval shape, and very old. Many cisterns show transitional stages of development. Extent and form, as well as age, vary very much. A great many cisterns are of quite modern construction. These are reservoirs, sometimes in the open, more frequently, however, under the dwelling-places. Almost every house in Jerusalem has one or two cisterns. On the ground of "Kaiserin Augusta Victoria Stiftung," Mount Olivet, alone there are more than ten cisterns. The total number of cisterns in Jerusalem is estimated to be at least 6000. The largest cisterns, in some cases of gigantic dimensions, are under the area once occupied by the Temple. Their supply of water is always preserved as a reserve for the years poor in rain. The majority of cisterns never get completely dry even in the most rainless season. This is the breeding time of the malaria mosquito, which becomes then a veritable scourge for the city and its surroundings. A movement is now on foot to combat this scourge. A memorandum, in which all the foreign consuls concur, has been submitted to the governor of the city, and the creation of an international hygienic central station is counselled. Henceforward the German Bacteriological Investigation Institute will coöperate with the American establishment. It is intended to erect a branch for the study of hydrophobia. The water-supplies will be regularly analysed. All these efforts will naturally contribute a great deal to the sanitation of Jerusalem.

Instruction in Hygiene and Sanitation.

The various municipalities of the Ottoman capital are combining their efforts to instruct the general public in matters of hygiene and sanitation. Nowhere is this more needful than on the banks of the Bosphorus, where the intellectual level of the population is exceedingly low, where superstition and ignorance are of the grossest nature, and where the ideas and notions on questions of health, prophylaxis, disinfection, and so forth, are primitive, and very frequently absurd. A large number of placards in Turkish, Greek, Armenian, and other languages, are being distributed or posted in public places of different districts drawing the attention of the population to the dangers resulting from the neglect of cleanliness. Advice is given never to accumulate refuse or to throw it out of the door or window, a practice frequently indulged in by the lower and middle classes, and to use disinfectants liberally. The cheapest and most accessible drugs for the purpose are being enumerated, and the way of using them most effectively indicated. The bills lay stress also upon the fact that these matters are not merely private and individual concerns, but are of the greatest hygienic and sanitary importance to the whole community. Wilful neglect or deliberate disregard of the instructions will be strictly punished. Rules and regulations are set down to make the injunctions more efficient. The municipalities also promise to institute in various parts of the metropolis gratuitous classes for all who desire instruction in hygiene and sanitation. These classes are to include bacteriological demonstrations. How far the intended scheme will work is, however, a question. Lack of every vestige of education, combined with rampant superstitious beliefs and consequent intellectual incapacity, will prove almost insurmountable hindrances. Besides, the lower classes in Turkey, as elsewhere, always consider sanitary and hygienic authorities as enemies and oppose any innovation—such, for instance, as vaccination. Neither facilities offered, injunctions issued, nor threats are able to induce certain classes to allow their

children to be vaccinated at the proper time. So here, as everywhere, education is the paramount necessity.

The Ottoman Red Crescent.

The Ottoman Red Crescent Association is to issue shortly a book descriptive of its activities during the last Balkan war. It will be a substantial volume of 400 pages, containing about a hundred photographic reproductions and many other interesting pictures. A whole section of the book will be devoted to the thorough description of the activities of the various European Red Cross associations which have, in so self-sacrificing a manner, contributed their efforts for the relief of suffering during the whole campaign. It is interesting to mention in this connexion that the Central Direction of the Red Crescent Association has lately erected a new hospital in Derindjeh, near Tusla, in the Gulf of Ismid. It contains 200 beds destined for the wounded soldiers of the Ottoman West Army, which is now being disbanded. The leader of the Sanitary Commission is Dr. Emin Pasha, and his assistant is Dr. Djemaleddine Muktar Bey. The buildings that have been used as hospitals in the city are being emptied by degrees now that active hostilities have ceased.

July 24th.

NOTES FROM SOUTH AFRICA.

(FROM OUR OWN CORRESPONDENT.)

"The Black Peril" in South Africa.

THE Commission appointed under the chairmanship of Sir Melius de Villiers to investigate assaults on women has done its work with a thoroughness worthy of all praise. The Commission visited every portion of the Union except the native territories where the holding of a formal inquiry would have been injudicious and unnecessary. It examined or received statements from nearly 300 persons able to testify from first-hand knowledge of the matters requiring elucidation. The statistics and other information supplied to the Commission show that a serious evil in respect of sexual assaults upon white women does exist, and that it is one which, on the whole, has been increasing. The actual figures show that whereas in 1901 the total number of convictions of natives or coloured men for assaults of this kind upon white women throughout the Union was 11, in 1912 the number was 70. In the year preceding it was 80. Undoubtedly there would be little reason to fear the black peril in South Africa if every European could be depended upon to behave in a manner befitting members of a stronger race and heirs of a superior civilisation. The report indicates that the illicit liquor traffic on the Rand is creating a class of whites who are bringing the name of white womanhood into disrepute. We are told also that there are white women and girls so criminally careless in their treatment of black houseboys that they give the latter "opportunities of seeing them in a state of undress in which they would not dream of showing themselves to a white man." Then there are instances where white women, mistresses or servants, are saddled with a much graver and more shameful culpability. The practical recommendations of the Commission are of the greatest interest and will demand the most careful consideration of Parliament and of the public. The Commission records its opinion regarding the inexpediency of publishing the details of the trials of persons accused of sexual offences. The proposal to forbid the publication of the name of the victim or of any detail by which she could be identified is in the interests both of humanity and justice, though many may not agree with the wisdom of suppressing the name of the accused, at all events if he is convicted. Most important is the legal prohibition of miscegenation, not only of native males with white women, but of white men with black women. The age of consent is raised. The Durban system of Kafir beer-drinking and eating shops under municipal control for natives in urban areas should be extended all over the Union. In the case of the Rand, the manufacture of Kafir beer of a light alcoholic strength should be supervised and controlled by Government, and the mines should be obliged to issue one ration daily. The adoption of the Kimberley system of closed compounds on the mines is also strongly urged. This recommendation will be stoutly contested by the trading community of Johannesburg, for it would involve many storekeepers in ruin. It is fairly certain, however, that it will be upheld by the profession, as it would enable the natives to live under conditions most conducive to their well-being. The establishment of training schools for native girls with a view to domestic service is recommended, as the Commission despairs of a sufficient supply either of oversea or colonial white girls or Cape coloured girls to take the place of the native houseboy. Another recommendation is the abolition of jury trial in mixed cases of sexual assaults, though in this instance Sir Melius de Villiers and Sir John Graham, two of the most experienced Commissioners, dissent.

Draft Hospital Ordinance.

A draft hospital ordinance for the Orange River Free State, practically identical with the Cape ordinance passed last year, has been gazetted. The boards are to be a multiple of six, and to consist of representatives of the municipalities and of the contributors and nominees of the administrator in equal proportions. The omission of representation of the medical profession is most objectionable, considering that otherwise the draft ordinance closely follows in every respect the Cape law. It will be opposed in the Council by the profession. Should it become law without being amended in the manner desired, the profession may refuse to serve on the staffs of any of the hospitals.

Cape Hospital Board.

The Cape Hospital Board has appointed a committee to consider the general policy of the board with regard to the betterment of hospital accommodation in the Cape Peninsula. The committee is taking evidence as to the needs of the area. It is enlisting also the coöperation of the Senate of the South African College on the question of the probable extension of the existing medical school; of the British Medical Association on the same question, as to the suitability of existing hospitals for the treatment of the poor and paying patients, and as to the establishment and administration of a maternity hospital; of the medical officer of health of the city as regards infectious cases; of the King Edward Memorial committee and the Helena Maternity Home committee as to the establishment of a maternity hospital and the organisation of visiting maternity nurses, and other questions. The action of the board in appointing this committee and its desire to coöperate with the profession in this matter are greatly appreciated. The Western Province Branch of the British Medical Association has appointed a special hospitals committee to represent that body during the inquiry.

An Abortive Public Health Bill.

Before the close of the recent Parliamentary session Mr. Fischer attempted to rush a short Public Health Bill through the House of Assembly to revive the now defunct Public Health Act of Natal with the exception of the provisions relating to the Board of Health appointed under that Act. Mr. Fischer, however, faring no better than his predecessor, and finding that his proposals met with solid opposition from all the medical members, hastened to withdraw the measure.

New Children Act.

Amongst the few measures that were passed by Parliament was one dealing with infant life protection. The Bill, introduced by a private member and taken over by the Government, has many good features, but some bad ones—e.g., it associates the prisons administration much too closely with child life protection, and introduces the policeman to work that could be better carried out by female sanitary inspectors or health visitors. Except in the latter respect the Bill seems to be a consolidation of the old Cape laws on the subject. Unless the new law is to be administered by some department other than that of Justice it is feared that it will have to fall very largely into abeyance as similar legislation has done in the past

Health on the Mines.

According to the Native Affairs Report for 1912, the average number of natives employed during the year on mines and works in the proclaimed labour districts was 220,873. The number of deaths from disease was 4988, but no account is given of those dying while being repatriated or after arrival at their homes. However, this gives an apparent death-rate from disease on the mines of 22·5 per 1000. The death-rate from accident was 4·22 per 1000, and the total death-rate

26·8 per 1000, as compared with 31·64 per 1000 for the previous year. Taking the ten-year period since the mines resumed operations after the war, it appears that the rate has fallen from 71·7 per 1000 to 26·8 as recorded last year. The progressive decrease must be regarded as satisfactory in a sense, but, of course, the present rate is shocking when one considers that the labourers are all picked men in the prime of life. The death-rate from disease amongst the 21,967 natives recruited from north of latitude 22° is returned as 47·6 per 1000. The death-rate from disease amongst the 198,806 natives recruited from south of latitude 22° is returned as only 19·9 per 1000, the combined rate being 22·5. In each case these rates appear to be the lowest on record during the ten-year period. The following table is culled from the report above referred to showing the number of natives recruited from the various areas south of the tropics and the death-rate per 1000 in each case, viz.:—

Area from which recruited.	Number of natives.	Death-rate per 1000.
East Coast	75,938	29·6
British Bechuanaland ...	2,451	29·0
Basutoland	10,000	22·5
Swaziland	4,104	18·8
Transvaal	25,269	15·8
Cape Province	61,938	11·6
Natal Province	17,971	11·5
Orange Free State ...	1,243	9·7

One of the most remarkable facts disclosed in this table is the comparative immunity enjoyed by the Cape and Natal natives as compared with East Coast natives, or even with natives recruited from Basutoland. The superior stamina of the former is no doubt mainly responsible for this, and also because the Mozambique recruits come from a more tropical area. There would seem to be the gravest doubt, however, whether the disparity would be so great had the Mozambique recruits the same facilities for returning home when sick as are afforded the Cape and Natal natives.

June 26th.

NEW ZEALAND.

(FROM OUR OWN CORRESPONDENT.)

Adulteration of Foodstuffs.

FOLLOWING the example of the Australian States New Zealand has at last gazetted a series of regulations dealing with adulteration of foodstuffs, the labelling of packages containing such, shortweight, the amount of moisture permissible in bread, butter, &c. The Act, in virtue of which these regulations are made, was passed some years ago. Some of the standards may seem rather low. 45 per cent. of moisture, for instance, is permitted in bread.

Mental Defectives.

Here, as in Great Britain, the question of how to check the evil influences of mental defectives is engaging considerable attention. Quite recently a 16 year old girl was convicted for attempting to set fire to the orphanage to which she had been committed. Evidence for the prosecution showed that the girl had a propensity for setting places on fire. Her conversation was mostly about fires. The Crown Prosecutor suggested an amendment of the Act. The trouble was that the present Act did not provide for the reception of girls over 16 by simple committal of the judge. The order of the Governor was required in cases over 16 and under 19 for detention in a reformative institution, either in lieu of sentence or after a term of imprisonment had been served. A sentence of three months' imprisonment was imposed, with instructions to the gaoler to keep the girl away from the other prisoners. An industrial school boy was convicted of two charges of breaking and entering. Counsel for the defence urged a mental defect on the part of the prisoner. His brother had been convicted of a "gross offence," and was now an inmate of a mental hospital. His sister had given birth to three illegitimate children and had been convicted of theft.

Medical Inspection of School Children.

Some of the data obtained by the inspectors appointed to inspect the children attending the State schools are of considerable interest. In one district, referring to boys and girls of the second standard, 70 per cent. were found to have "bad teeth," 25 per cent. suffered from enlarged tonsils and adenoids, and 75 per cent. suffered from enlargement of the glands of the neck due to septic absorption from the bad teeth. In one school all the children in the second standard had enlarged glands in the neck. Nearly 30 per cent. of the children had either "stooping shoulders," pigeon-breasts, or narrow chests. In one school the percentage of such defects reached 57 per cent. It is interesting to compare these results with those obtained from examination of school children in England and Scotland. It has to be remembered that here in New Zealand there is no "submerged tenth." Work there is for all who care to work. The work may not be just what the worker wants, but real poverty, inability to procure food, does not obtain here.

Cost of Hospitals.

The Dominion hospitals are supported half from the Consolidated Fund and half by rates raised from the local bodies in the district in which the particular hospital is situated. The board which controls and demands the moneys necessary for the upkeep of the hospitals is in no way amenable to local control. One consequence of this is that no local authority knows exactly what amount of the rates it collects from the ratepayers may have to go towards hospital and charitable aid purposes. A borough council, for instance, may strike a rate which it considers adequate to deal with its drainage, tramways, or water-supply, but its credits may be unduly assailed by demands from the hospital board, and in this way its finances may be quite dislocated. Recently there was a meeting of mayors and chairmen of local bodies to consider how best this disorganisation of borough finance could be obviated. Several suggestions were made, but the one that found most supporters was that which urged that a statutory limit should be put upon the hospital board's demands. One speaker in the discussion drew attention to the fact that last year in the Wellington district only £4000 had been collected out of £24,000. There is no doubt whatever that grave misuse is made of the public hospitals. One delegate stated that a person owning property worth £600 applied for charitable aid and got it.

Medical Registration.

A deputation of medical men waited upon the Minister in charge of the registration of medical practice asking him to bring in a Bill which would give the medical profession some control of the Register, and also some power of dealing with those on the Register. The deputation suggested the setting up of a modified General Medical Council on the lines which exist in Great Britain. The Minister gave the deputation a more sympathetic reply than did previous holders of that office. It remains to be seen whether the sympathy will result in anything of practical value. There is a feeling amongst the profession that unless a stand is made the services of the medical men will ere long be in a great measure nationalised without the preliminary of a "National Insurance" scheme. In the larger hospitals there is a superintendent with a fixed salary, supported by an honorary staff of surgeons and physicians. It would seem, in virtue of the last Hospital Act, that the Minister has a decisive voice in the selection of the medical superintendent and the matron. Some of the profession feel aggrieved at the first power, and some of the boards have openly flouted the instruction of the Minister with respect to the appointment of matrons.

Death of Dr. George Wilson.

There has passed away in Dr. George Wilson one of the leaders of the profession in New Zealand. Some 18 years ago he left Edinburgh because of his health and settled in Palmerston North, an important town near to the capital. Very soon he came to be regarded as one of the soundest diagnosticians, the most genial of men, and the sanest of surgeons. No man had fewer enemies and no man had more admirers, lay as well as professional.

June 21st.

A CENTENARIAN.—On August 3rd Mr. William Hoathey, of Southover, Lewes, celebrated the 101st anniversary of his birthday. A sister has reached the age of 99, and three of his seven children living are aged 70, 67, and 60 respectively. He has lived in his native place all his life.

NOTES FROM INDIA.

(FROM OUR OWN CORRESPONDENTS.)

Shrines and Sanitation.

A BOMBAY newspaper says that the idea that cleanliness is next to godliness does not enter the Oriental mind—it is better to be dirty and holy, than clean and unholy. The difficulty that surrounds this question should be appreciated. The veneer of European habit and custom is often little more than skin deep. It has been found frequently that a wealthy Indian, who may possess a splendid establishment, prefers to live in a small hut at the back, reserving his fine house for the entertainment of his guests. It is often difficult, too, to induce the Indian to keep his temples in a sanitary condition, and the difficulty is enhanced by the ecstatic fervour of pilgrims who are ready to immolate themselves at the shrine of the deity, saint, or prophet. Some years ago bottles of sacred water from Mecca were found full of pathogenic germs. Of late it has been forbidden to bathe in the sacred wells, but cholera continues endemic. The Government of Bombay has recently imposed new regulations with regard to Mahomedan pilgrims visiting Mecca, to which, however, the would-be pilgrims object.

Scientific Investigation in India.

The programme of work of the various scientific departments under the Government of India for 1913–14, which is to be carried out on an elaborate scale, will include further investigations of Indian opiums and aconites. Mr. Field's scheme for upper air research has been sanctioned. The discussion of previous balloon ascents made from Jhang and Simla is proceeding, and it is hoped that the accuracy and reliability of the snowfall data at present received from various stations in the Himalayas will be determined when Mr. Field completes his scheme.

Bombay Hospital Reform.

The Governor in Council has for some time had under consideration the desirability of bringing the European non-official community of Bombay into closer touch with St. George's Hospital, so as to profit by their advice in matters affecting the welfare and utility of the institution, and to ascertain their special needs and requirements, as well as to revise the conditions under which well-to-do members of the community obtain admission to the hospital for treatment. A portion of the hospital is to be separately administered as St. George's Nursing Home, under an advisory committee. Inmates will be under the care of their own medical attendants, whom they will select from a list of physicians and surgeons appointed by the Government as honorary physicians and surgeons to the home. The advisory committee is to draw up rules governing the admission of patients and the charges for accommodation.

The Sanitation of Patna.

During the year ending March 31st, 1913, a sum of Rs. 87,000 was placed at the disposal of the municipality of Patna for various improvements, more especially in connexion with conservancy and street lighting. A scheme for a combined waterworks for the new capital and the old town is also under preparation, at an estimated cost of 20 or 22 lakhs of rupees. The drainage and sanitation of the town are being examined to ascertain whether a suitable flushing scheme can be combined with the waterworks. A health officer and an assistant sanitary engineer will shortly be appointed to carry out these schemes. The Government of Bihar and Orissa has relieved the Patna municipality of much of its expenditure in connexion with education, and has also given Rs. 42,000 for expenditure on the six main roads in the town. A recurring grant of Rs. 20,000 for four years, with effect from 1914–15, will also be made for maintenance of these roads, to free municipal funds for sanitation and town improvement.

Medicine in Central India.

Mr. A. L. P. Tucker, the agent to the Governor-General in Central India, in an address at the opening of the summer session of the King Edward Hospital at Indore, reviewed the progress of Western medical science and surgery in Central India and spoke of the fine work accomplished by the Indian Medical Service there. As far back as 1848 a charitable hospital was established in Indore. Not till 30 years later was any real progress in accepting Western methods made in Gwalior. Bhopal established a medical department in 1854, but it is not recorded that it achieved much, and 16 years elapsed before the first hospital on European lines was opened there. It must not be supposed, however, that there was no medical aid of any sort within reach of the people before the British occupation. On the contrary, the West "in the matter of medicine owed and acknowledged an immense debt to the East." The ancient city of Ujjain was a well-known seat of medical learning, while undoubtedly surgeons and physicians accompanied the great Moghul armies that passed from time to time through Central India. Their methods were probably of the rough-and-ready order, though possibly their skill might compare not unfavourably with that of Western physicians of their day. The people themselves had great faith in their own healers—the Hindu *vaids* and the Mahomedan *hakims*—some of whom won astonishing reputations for marvellous cures. Mr. Tucker showed how difficulties of communication hampered medical progress. In the rains the country became "absolutely landlocked," and Western medical relief was confined to the towns. Country people had to look after themselves, relying on the scanty knowledge handed down from generation to generation. Not long ago a peculiarly violent form of malaria, which developed into pneumonia and was very fatal, was "treated" by a blacksmith by branding his patients on the back and loins with a heated ploughshare. What success attended this drastic treatment Mr. Tucker did not say. It seems strange that while the simple countryfolk readily submitted to treatment of this kind, they would not submit to surgical operations on Western lines. It was not the knife they dreaded, but the anæsthetic. They soon came to appreciate the value of Western medical treatment, however. In 1911 the 217 State and aided medical institutions in the Central India Agency treated considerably more than 1,500,000 new patients. Mr. Tucker paid tributes to Dr. Beaumont, who won a great reputation as an eye specialist in the 'sixties at the Indore Charitable Institution (of which the King Edward Hospital is an offshoot), and later discovered a successful treatment for phagedæna in the application of strong nitric acid; and to Dr. Keegan, under whom, in the 'eighties, the Indore Charitable Hospital became recognised as one of the most important institutions of its kind.

July 11th.

Correspondence.

"Audi alteram partem."

THE NATIONAL INSURANCE ACT.

To the Editor of THE LANCET.

SIR,—The reports of your special commissioner and occasional letters in the daily press convey the impression that there is still a good deal of dissatisfaction raging in the minds of those doctors who unwillingly joined the panel, and that there is still a considerable remnant of general practitioners who persist in their determination to abstain from making themselves parties to the "ignoble surrender."

It seems to me that the whole of this discontent may be attributed to a misapprehension of the principle of coöperation which receives application in the contract system of payment *per capita* adopted under the Act. It is already dawning upon the minds of those doctors who had held contracts under the club system that the terms upon which they are now working are a considerable advance upon those previously prevailing. There is no dissatisfaction in this section of general practitioners; the receipts for the last six months for contract work under the Act compare so pleasantly with those from club work of the previous half year that all dread of the ruin that was anticipated must by now have completely dissipated. The fact of this increase, however, does not apparently convey to many of this section clear proof that a substitution of contract for private practice has been to their advantage. They still imagine that as private clients the new hundreds on their register would have provided them with more remuneration. In any district in which all the doctors who formerly practised upon the employed classes have gone on the panel the *clientèle* of

each is now exactly what it was before the Act—with the addition to it of scores or hundreds who were clients of no man before. The Act has not added to my list the name of one person who was the client of another doctor before. It has not put on the list of my *clientèle* the name of a single person who would not before the Act have come to me in the event of illness, gone to the hospital or the chemist, taken "herby tea," or trusted in Providence. As my list of contract clients is considerably enlarged, it must follow that the increase is due to a transfer to that list of many private clients, and an uncertain number of others who were accustomed—if they ever were ill—to get treatment in the way just now indicated; and if my general income is being augmented it must also follow that contract practice at present rates is more advantageous to me than private practice upon the employed at the old fees per visit. For me it is better to have the employed upon the register—they are worth more to me there than in my ledgers. There seems no reason to suppose that this reasoning could not be applied in every practice—that the transfer of private clients of the employed classes to the list of registered persons is to the doctor's profit. It is not only true to say that we are being better paid for our work upon the employed classes, but that we are now being paid for a portion of that large section of the employed who before the Act paid no doctor, because these people took their ailments to the hospital, the chemist, or the advertising medicine vendor. The slight increase of work that has come to my hands since the introduction of the Act is certainly due to this simple fact, that a percentage of the employed in my district has hitherto resorted when ill to "irregular" methods of treatment—they never brought grist to my mill. I imagine that the increase of sickness above expectation can be explained in this way. It is the newly insured persons, not the ancient clubites, who pester us with their small ailments. They know their rights, and very often out of sheer curiosity now resort to the doctor whom they have hitherto contrived to avoid or bilk. We know that the death-rate is still declining, so that there cannot have been any real increase in the ill-health of the community. It is obvious that by now the out-patient departments of hospitals, the chemist, and the nostrum provider must have noticed a decline in their business.

Before the Act about 4,000,000 of the employed were paying an average of 5*s.* per head to the club doctors. Now 15,000,000 are paying 9*s.* per head to the panel doctors. Of the 9,000,000 not previously insured half probably were in olden days "private clients" of the general practitioner. What was their yield per head? A very generous estimate, founded on my own investigations, gives one and a half times the visiting fee as the annual tribute of private clients of any class, and it is pretty safe to say that the average visiting fee for the class now become State insured is not over 2*s.* 6*d.* The generosity of this estimate is exhibited in the following statement. I found that the first 250 people put on my list had, during a period of five years as private clients, supported me to the extent of £19 per annum. If they had yielded according to my estimate (one and a half times the visiting fee) I should have received £45 per annum from these clients. Under the Act I am to be paid £110. If there is this increase on a conversion of 250 private clients into contract clients, it is a matter of simple proportion to find out the advance in income which accrues to the panel doctor on the conversion of 4½ million from 3*s.* 9*d.* per head-paying-private-clients into 9*s.* per head-paid-insured-persons. It is the confusion of "patient" with "client" or "person" which prevents many practitioners from realising the advantages of contract payments over payments for "visits." A doctor may easily find out the number of patients he attends per annum, but he cannot, unless he lives in an isolated district, have any but the remotest idea how many persons compose his *clientèle* or practice, because so many are merely potential patients until they come to die. Suppose there were, say, in one street 50 houses, to all of which a certain doctor had every reason to believe he would be called in case of illness. If each house contained 10 persons there would be 500 clients, and if his fee is 5*s.* per visit his utmost endeavours would not extract more than 7*s.* 6*d.* per head per annum for all services excluding midwifery. If these people were converted into insured persons at the State rate the receipts would advance slightly and the doctor would be spared the trouble of collecting his income. The work performed, however, would be different in the two cases. In the case where he is only called when he is needed he calls one and a half times per head, and in the other where he calls when he thinks proper he may call as often as three times per head of the 500. Even so he gains by accepting the contracts. The "reluctant" practitioner finds it extremely difficult to dissociate the individual patient from the payment he is to receive from him. For the price of a dozen collars the doctor may have to put in work on an individual insured person that would have meant a bill of pounds for the same work in private practice. He receives from his insured clients 9*s.*, that is, 3·8 times the 2*s.* 6*d.* visiting fee for that class. If, then, he attends his insured people twice as often as he does his private people, he is still better paid for his insurance work than he is for his private work on the same class. The figures given are averages—they vary slightly in every practice. A fussy doctor will have fussy patients, and the fussier they both are the higher the visiting figure. A non-panel doctor cannot hope to make—it is not possible to make—as much as 9*s.* per head from private clients of the employed classes.

Having satisfied himself once for all, as I am certain he will by the end of the year have succeeded in doing, that his insurance work is as well recompensed as his work on his private clients of the same class, if not better recompensed, there is no reason whatever, surely, why the practitioner should not faithfully and cheerfully render to his patients of the former group all the service he is accustomed to render to his patients of the latter group. On easy ground the insured are entitled to the best he can give, and there is no excuse for slipshod work. The hospitals are still, as they always will be, a necessity in the treatment of the ills and injuries of the working classes; they were instituted for the benefit of the working classes, and the doctors would not exist without them. The patients' interest should of course come first, and it is without doubt to the advantage of the insured that mercenary motives on the doctor's part can no longer operate to the detriment maybe of the individual person. Wilful neglect of duty to the insured such as is boasted of in some parts of the country (see letter by "Cynical Panel Doctor" in *Daily Mail*, July 3rd) is nothing less than inhuman.

I quite recognise the difficulty of dealing with so-called malingering, and in my opinion the appointment of referees would not only check the malady, but be an economy. It is practically impossible for the practitioner who is not pachydermatous to refuse a certificate to a person desiring to go on, or to force one on a person who is opposed to going off the funds. A referee would be of no use in the first, but would soon cover his cost in the second group of cases.

I venture to believe that when the certain advantages of the contract system of payments as applied to the employed classes have been brought home to the minds of those of us now working under that system, there will set in a steady movement towards the adoption of this policy with all classes above them in the social scale. It is the only practical remedy by which we can meet a declining sickness-rate.

I am, Sir, yours faithfully

E. HALL, M.B. Lond.

West Mersea, Colchester, July 20th, 1913.

To the Editor of THE LANCET.

SIR,—When the Insurance Act came into force it was the opinion of many that the value of medical practices would in consequence be depreciated. As a matter of fact, however, the Act has increased their saleable values. In industrial districts the old-established practitioner who formerly worked in with his private practice club patients at 3*s.* or 4*s.* a head and had to waste a considerable portion of his time in dispensing for them, also had a long list of bad debts amongst his private patients, now has a large panel list at 7*s.* per head, no dispensing to do, a certainty of regular payment, and few bad debts. This change has become a valuable asset. He has, of course, lost a proportion of his private patients who have been compelled to go on the panel, but as few of these were considered "good paying patients" attendance upon them frequently only swelled the list of his bad debts, without taking into consideration the lengthy period of credit taken and given.

It is obvious, therefore, that practices must, and have, become more valuable, and that in the future they will only be obtainable by purchase. And it is a logical conclusion that the newly qualified man in search of a practice will purchase an already established connexion rather than risk failure and loss of his capital. The "squatter" without introductions, however good a chance he may have had during the early months of the Act coming into force, will have a very poor chance of success, as the industrial classes upon whom he formerly relied will have already become "attached," and the higher classes are proverbially slow to change.—I am, Sir, yours faithfully,

W. W. HARDWICKE, M.D. St. And.

Carlyle-square, S.W., August 2nd, 1913.

THE PHYLACOGEN TREATMENT OF CHRONIC GONORRHŒAL AND RHEUMATIC CONDITIONS.

To the Editor of THE LANCET.

SIR,—I see that you have recently published some experiences of medical men in the use of phylacogen. For the last nine months I have been regularly employing phylacogen, and during that time have treated upwards of 30 cases—chronic rheumatism and rheumatoid arthritis with rheumatism phylacogen and chronic gonorrhœal infection with gonorrhœa phylacogen. I submit brief notes of the following two cases, not because they present any exceptional features, but simply as types of the whole series. I may say that with the exception of two cases the results were highly satisfactory.

1. Female, aged 52. This patient had a history of some years' invalidity, and she spent most of her time in bed, only being able to hobble about when she was up with the assistance of two sticks. The joints of her hands were swollen and the fingers distorted, and she complained of severe pain in the joints and pain extending from the hips to the toes. Oct. 22nd, 1912, 3 c.c. of rheumatism phylacogen were injected subcutaneously; this was followed by slight local and general reaction. Oct. 30th, 5 c.c.; patient feeling better, but still could not move and had bad nights. Nov. 1st, 5 c.c.; condition slightly improved. Nov. 5th, 7 c.c.; improvement in joint pains and pain along sciatic nerve. Nov. 7th, 7 c.c.; patient obviously better, could move with more freedom, but still unable to get out of bed. Nov. 9th, 10 c.c.; patient much improved. Nov. 10th, pain almost gone. Nov. 12th, 10 c.c.; patient practically free from pain but complained of stiffness. Nov. 13th, patient able to get out of bed and advised to move affected limbs. Nov. 14th, 10 c.c.; improvement very marked, patient able to walk without assistance of sticks. Nov. 15th, patient much better and apparently well except for stiffness of the joints. All joints could now be moved without pain. The patient steadily improved and was able to perform her household duties till Jan. 4th, when she had a slight relapse, but not of sufficient severity to compel her to use her sticks. Jan. 5th, 7 c.c. were given with good result, and 10 c.c. on Jan. 7th. Since that time the patient has kept well, has been able to walk unaided, and to perform her household duties.

2. Male, aged 21. This patient consulted me on Dec. 13th, 1912, and complained of lassitude, want of energy, and feeling run down. He had not felt in really good health since an attack of gonorrhœa some 18 months previously. The discharge "came and went," but he had never entirely got rid of it. Examination per rectum showed the prostate gland was indurated. Gonorrhœa phylacogen was administered, 5 c.c. being injected subcutaneously into the arm at 7.30 P.M. on Dec. 13th. At 10 P.M. the arm had become intensely red and painful, accompanied by numbness and limitation of movement; headache, but no other general reaction and no focal reaction in the urethra. Dec. 15th, 7 c.c.; local reaction as before in about six hours, together with severe headache and feeling of nausea, but patient was able to perform his duties next day. A greenish-yellow discharge appeared; urination painful and frequent, "just like the acute attack." Dec. 17th, 7 c.c.; local and general reaction less severe, discharge less purulent and less abundant; felt better in general health. Dec. 19th, discharge had almost stopped. Dec. 21st, 7 c.c.; little reaction. Dec. 22nd, discharged entirely ceased and patient apparently well. Since that time the patient has been frequently seen; there has been no recurrence of the trouble, and he feels better than he has done in the past 18 months.

I have also treated septic infections with mixed infection phylacogen with satisfactory results.

I am, Sir, yours faithfully,

ALEX. MCCALL, M.D. Glasg

Uxbridge-road, W., July 25th, 1913.

THE Director-General of Public Health reports by telegram that the small-pox epidemic now existing in Sydney is of very mild type, similar to that in Canada. There have been 400 cases, no deaths, and no patient has been dangerously ill.

SEVENTEENTH INTERNATIONAL CONGRESS OF MEDICINE.

THE International Medical Congress was formally opened on Wednesday, August 6th, by His Royal Highness Prince Arthur of Connaught, acting on behalf of His Majesty the King.

In order that visitors attending the Congress may have opportunities of seeing the work of the London hospitals, arrangements have been made for this purpose by the authorities of the principal general hospitals, and these are announced in the official daily journal which is issued to members at the Albert Hall. The special hospitals can be visited by arrangement with the secretaries of the individual scientific sections.

The Museum of the Royal College of Surgeons of England, Lincoln's Inn Fields, W.C., has been open to members of the Congress, and will be open from 10 A.M. to 5 P.M. on August 8th, and from 10 A.M. to 1 P.M. on August 9th. The library of the College will be open to members of Congress from 10 A.M. to 1 P.M. on August 9th. The Royal Society of Medicine, 1, Wimpole-street, admits members of Congress to its library. The Council of the Royal Sanitary Institute, 90, Buckingham Palace-road, S.W., invites members of Congress to visit the Parkes Museum of Hygiene and their buildings, and offers them the use of the library and reading-room and the members' common room.

On the occasion of the International Congress of Medicine the Royal College of Surgeons of England conferred the honorary Fellowship of the College upon the following foreign and colonial surgeons: Professor R. Bastianelli, Rome; Professor A. Bier, Berlin; Mr. F. D. Bird, Melbourne; Dr. G. W. Crile, Cleveland, U.S.A.; Dr. H. Cushing, Harvard; Dr. A. F. von Eiselsberg, Vienna; Dr. E. Fuchs, Vienna; Dr. H. Hartmann, Paris; Professor W. Korte, Berlin; Dr. W. J. Mayo, Rochester, U.S.A.; Dr. A. Monprofit, Paris; Dr. J. B. Murphy, Chicago; Dr. J. Nicolaysen, Christiania; Dr. F. J. Shepherd, Montreal; and Professor T. Tuffier, Paris.

Special arrangements have been made for divine services on Sunday, August 10th. In St. Paul's Cathedral a special sermon will be preached in connexion with the Congress at the 10.30 A.M. service by the Very Rev. the Dean of St. Paul's. In Westminster Abbey at the 10 A.M. service a special sermon will be preached by the Right Rev. Bishop Ryle, Dean of Westminster. In Westminster Cathedral the service in connexion with the Congress will be a solemn High Mass beginning at 10 30 A.M., during which a special sermon will be preached by His Eminence Cardinal Bourne, Archbishop of Westminster. Seats will be reserved for members of the Congress, and members are requested to put down their names at the Albert Hall for these services not later than to-day (Friday, August 8th), in order that sufficient seats may be reserved. The offices of the Congress will be closed on Sunday.

Sir Thomas Barlow, in his Presidential Address before the opening session of the Congress, which we print in full elsewhere, made happy references to the pioneers of medicine who gathered round his predecessor, Sir James Paget, 32 years ago, when the International Medical Congress last met in London. Sir Thomas Barlow justly pointed out that the Congress of 1881 was remarkable not only for the number of great men who attended it, but also for the fact that it

signalised that a new epoch in medicine had already begun. In 1881 the experimental method was beginning to bear fruit, and Pasteur, Lister, and Koch were laying the foundation of modern medicine and surgery. Having paid homage to the great masters of a generation ago, the President briefly reviewed the advances in knowledge and practice which have flowed in every direction from their pioneer work, and sounded a note of encouragement for the present and the future. He anticipated that the Congress of 1913 would be noteworthy for the solid value of the work accomplished in its many sections. Sir Thomas Barlow concluded with a word of graceful welcome to the visitors from foreign countries.

Two very interesting and important museums have been organised in connexion with the Congress—a Medical Museum, organised by a special committee; and a Museum of the History of Medicine, organised by Mr. H. S. Wellcome. Each of these has been referred to in THE LANCET on several occasions. The Medical Museum occupies two large rooms in the Imperial College of Science, South Kensington, and is arranged so that nearly every section of the Congress is represented. Specimens which are the subject of papers at various sections of the Congress are also included in the museum. A descriptive catalogue has been prepared by the secretary of the Museum Committee, Mr. H. W. Armit. The museum will be open until the evening of Wednesday, August 13th, from 10 to 6 o'clock each day. A special section of the museum has been organised by the International Association of Medical Museums to illustrate improvements in the various methods of preserving and exhibiting specimens. The remarkable Museum of the History of Medicine has been established by Mr. Wellcome at 54A, Wigmore-street, W., and a descriptive catalogue has been prepared of this museum also.

On Wednesday evening the President and officers of the Congress held a reception in the Central Hall of the Natural History Museum. Many thousands of members and their relations were expected and ample preparations were made to deal with a vast host, the arrangements being far ahead of anything we can recollect in previous gatherings. To begin with, there was no tiresome crush during the process of getting hats and coats safely stowed away. Still more wonderful, the refreshment buffets did not become the site of any scramble, and those who can recall the humiliating scenes that have before now occurred at these functions will realise that the officials of this Congress managed their entertainment exceedingly well. The proceedings were decorous throughout, and the refreshments offered could be obtained without any difficulty or waiting. Full use was made of the fact that the Natural History Museum not only has extensive premises, but stands in grounds that could be made available for all sorts of service. There was, of course, some crowding in the Central Hall, especially at the beginning of the conversazione, when many of the members who thought it their duty to pay their respects personally to the President of the Congress arrived in coherent masses. As soon, however, as the guests spread themselves through the various departments of the museum the sense of great crush disappeared. They stopped to look at the marvellous collections of animals, reptiles, fish, shells, or fossil reptiles, but more frequently they stood in groups talking or listening to the music of several bands or the singing of glees. The grounds were beautifully illuminated with festoons and strings of coloured fairy lamps. In an upper gallery was an interesting display under Mr. Hartley Durrant and Lieutenant-Colonel W. O. Beveridge, illustrating the investigations of the War Office and the Natural History Section of the British Museum into the nature of the damage done by insects to army biscuits. The scene throughout was most brilliant; not only did the ladies' toilettes give a variety of light and hue to the picture, but many men were dressed even in more startling colours. There were the bright scarlet robes affected by most of the university medical graduates, and many military uniforms. Altogether a pleasurable evening was spent, and the reception was certainly very well organised.

Major-General Lord Cheylesmore and the Committee of the Welcome Club have courteously elected all members of the International Medical Congress honorary members of the club, which is situated in the grounds of the Imperial Service Exhibition, Earl's Court, during their stay in London.

We are requested by the secretary of Section I. (Anatomy and Embryology) to point out that the name of Professor G. D. Thane was inadvertently omitted from the list of vice-presidents given in the short account of the Sections which appeared in our issue of July 26th.

The offices of the Congress will be closed on Sunday.

THE GOVERNMENT DINNER TO THE DELEGATES.

IT was eminently appropriate that the Government should speed the forthcoming session of the Seventeenth International Congress of Medicine with its blessing, thus acknowledging publicly its realisation of its own obligations in regard to the health and physical and mental well-being of the community at large. This it did in the dinner given on the invitation of Lord Beauchamp, First Commissioner of Works, on behalf of His Majesty's Government, on August 5th, at the Hôtel Cecil, to upwards of 500 selected members of the Congress, many of whom, of course, were officially accredited as the representatives of their respective Governments, while others bore names honoured far beyond the confines of their national realms for distinguished work in medical science.

Viscount MORLEY occupied the chair, and extended to the Congress a cordial, sincere, and respectful welcome on behalf of His Majesty's Government. He mentioned that a whole generation had passed since last the International Congress of Medicine assembled in London in 1881. He referred to the fact that many renowned men devoted to the pursuits and aims that animated his hearers had passed away, leaving behind them their records of rich work. Since then there had intervened a generation of earnest and continuous toil, ingenuity, research, thought, and invention, which had witnessed many a marvel in mechanics, engineering, electricity, applied chemistry, and the rest; but new truths and new expedients in medicine, the advance of pathology and surgery, might perhaps be counted as the most striking marvel of all. He referred to a remark by Professor Huxley, "that valiant lover and finder of truth," at the last meeting of the Congress in London, that "we are so used to thinking of medicine as something necessarily connected with curative treatment that we forget that there is such a thing as a pure science of medicine, a pathology which has no necessary subservience to practical ends." The programme of the Congress, said Lord Morley, covered both knowledge and its application to the alleviation of pain, the maintenance of health, and the prolongation of life. After a humorous allusion to speaking after a full meal as being at least as unhygienic as bathing after one, and a graceful acknowledgment of the great labour involved in the organising of such a vast Congress, exceeding in numbers all previous ones, he referred to the powerful unifying effect of international congresses in a world where so much makes for disunion. Touching on the subject of excessive specialism, he said there were narrow specialists and broad, and expressed the hope that all medical specialists would be of the broad sort, and while doing priceless and indispensable work in particular organs, parts, regions, maladies, and lesions, would yet keep well in touch with organisation and function as a

whole. He referred to the upward movement that had taken place in the status of the profession as a whole, and to the increasingly exacting standards that had to be satisfied by the practitioner. He instanced the extension of medical influence in the political and social fields. The relations of the Government with the medical profession were for the moment not of the easiest, but the difficulties were ephemeral and could be surmounted by and by by reference to the fact that it was the physician's influence that had brought about the notification of diseases, and the enactment of a whole code of housing, shops, factories, and health Acts, to the medical protest against the speeding up of education, and the last example, the Mental Deficiency Bill. Lord Morley then touched delicately on two burning questions. He told his auditors in the first place that they would find in this country opinion against anything like unrestricted experiments on living animals, while he said that in nobody was the spirit of compassion more alive, more constant, or more self sacrificing than in the good physician. He referred secondly to the question of Government control and responsibility in connexion with syphilis. Here, he said, ethical considerations rightly held a leading place in public opinion and what might be called the surgeon's reason of state, important as it must be, could not stand as the single decisive factor. But he admitted that it would be sheer moral cowardice to shrink from a large and serious inquiry into the extent, the causes, and the palliatives of this hideous scourge. We should investigate its results as we investigate the ravages of tubercle or cancer.

Sir THOMAS BARLOW, President of the Congress, was the first to respond. He tendered the thanks of his colleagues to the Government for their hospitality on the eve of the Congress, thus giving their *imprimatur* to it, and their recognition of the supreme importance of its work. He believed that this Government recognition proved that outside of party politics there was an increasing willingness to use medical coöperation in matters affecting public health and social betterment. The Government recognition also supported them in their claim that medicine overstepped all bounds of race, that it was a matter of world politics, a contributing factor towards peace and goodwill among men. The Congress assembled not merely for amusement or for pleasant intercourse, but for solid work, a large proportion of which was contributed by their foreign brethren. They all warmly applauded the choice of Lord Morley as the host and spokesman of the Government, for Lord Morley had ever rejoiced in the broadening of medical culture, the enlarging of its outlook, and the advance of its achievements. To him they owed instruction in the aims, successes, and failures of many leaders of liberal thought before and after the French Revolution. The lessons of political philosophy expounded by him from the lives of statesmen of their own time showed that Lord Morley would approve of the new section of the Congress dealing with the History of Medicine. No English statesman or man of letters could have been more appropriately selected to wish God-speed to them.

M. LANDOUZY, speaking in French, dwelt upon the community of idea that had permeated the geniuses of England and France in their progress through the ages. England could claim Bacon, Harvey, Shakespeare, Locke, Milton, Newton, Herschel, Sydenham, Jenner, Faraday, Stephenson, Bright, Darwin, Reynolds, Gainsborough, Lawrence, Lister, and Ramsay, while France had her Clouet, Montaigne, Descartes, Pascal, Corneille, Molière, Racine, Bossuet, Condillac, Watteau, Lavoisier, Lamarck, Victor Hugo, Lamartine, Claude Bernard, Pasteur, and Curie. In the English *savants*—men of action as well as of ideas—the distinguishing characteristic of the British temperament was seen to be depth. It was that which had caused La Fontaine to say that "the English think profoundly, their spirit is that following their temperament; penetrating deeply into the subject, and strengthened by experiment they extend in all directions the empire of science." Bacon it was who laid down the rules of experimental science, Harvey who discovered the circulation of the blood, Newton who formulated the laws of gravitation. La Fontaine was a prophet who foresaw Jenner, Darwin, Herschel, the long line of *savants* who without a break had shed light and lustre on this country. To-day the *savants* of 28 nations were united in their work for that most humane of the sciences, medicine, which was labouring continuously to give greater value to life, to render suffering less cruel, old age less grievous, death less speedy and less terrible, that the solidarity, which was the dream of yesterday, might become the reality of to-day.

Professor V. SCHJERNING, who replied in German, referred to the length of time that was wont to elapse in olden days before reforms in medicine overpassed the boundaries of the country in which they had their rise. How different was it to-day! The way in which in recent wars all nations had come to the aid of the sufferers amply demonstrated the difference. He quoted the words of Prince Hohenlohe, that it was the duty of humanity to work for the good of man. He concluded by calling upon all to drink to the health of the British Government and to the success of their Congress, which appeal was enthusiastically responded to.

THE INAUGURAL CEREMONY.

From the very first moment that the doors of the Albert Hall were opened members of the Congress began to flock in. The attendants, the clerks, the assistants were soon hard at work helping polyglot congressists to obtain their tickets, cards, reports, and badges. Soon the new arrivals became very numerous, and, as usual, many of them had neglected to write to announce their intention of coming Soon a rumour spread round that the supply of badges had run short, though the number of foreign guests estimated for was in excess of that ever expected at any previous gathering of the sort. By 10 o'clock the character of the crowd commenced to change. Military uniforms and university gowns began to take the place of travelling suits, and to give a gay note to the scene. Wayworn travellers, who had arrived only just in time for the Congress, formed a drab background for their more gorgeous fellows. In the body of the hall there were rows of seats carefully mapped out and divided off by ropes guarded by numerous attendants. Here the representatives of universities and learned societies were to sit: there, only official delegates of foreign governments were allowed to take their places; while at the back some of the ordinary members of the Congress had chairs reserved, while many members soon began to fill the vast galleries, accompanied in some cases by friends. Of course, the most brilliant collection of uniforms and robes, and the finest display of stars, orders, and ribbons, were to be seen on the platform, though many more distinguished members of the Congress, bearing the outward mark of their fame, also gathered on the floor of the hall immediately in front of the platform. A soft light was diffused from the lofty domed roof of the huge hall, and bathed in this the vast and multi-coloured assembly made an imposing sight, and one that could not fail to impress every one present. Indeed, the spaces in the vicinity of the Albert Hall, the size of the surrounding buildings, the grace of the parks, the breadth of such streets as Prince's Gate and Queen's Gate, all bathed in sun, gave our foreign guests a flattering impression of the capital. Many among them spoke volubly of the greatness and magnificence of London as if the whole of the metropolis had been built on the Albert Hall scale.

At half-past ten the organ pealed out softly, and the murmur of some nine thousand voices conversing in from 20 to 30 languages gradually became subdued. Among the early arrivals was Professor de Grosz, the general secretary of the previous International Congress of Medicine. He wore an elegant Hungarian uniform, with a flowing mantle and a very formidable sword. Professor Lucas-Championnière had donned the dress, richly covered with green embroidered palms, of a member of the Institut, while Professor Landouzy was covered with the red robe of the Paris Faculty of Medicine. The Russian and German representatives wore military uniforms, as did the delegates of many other nationalities. Soon the vast hall, with its 9000 seats, was well filled in all parts except the highest gallery.

With no special decorations, with hardly any flags and no bunting, the hall now presented a magnificent spectacle. Such a vast assembly is not often to be seen in any building, and this crowd of persons of considerable intellectual achievement, including a notable number of the leaders of modern scientific thought, had about it a certain distinction of appearance. It was unmistakably an intellectual crowd.

Perhaps the most remarkable feature about the gathering was the atmosphere. Is the Albert Hall famous for its ventilation properties? There were no complaints of suffocation, no congested faces and profusely perspiring victims of overcrowding, so painfully frequent at the opening ceremonies of previous Congresses. Those who remembered the opening scenes of the Congress in the Royal Opera House at Madrid agreed that that splendid building did not offer anything like the vast expanse of space and abundance of air-supply enjoyed at Albert Hall. The Trocadero in Paris has similar advantages, but, again, is not on so large a scale.

At 11 o'clock precisely the National Anthem resounded loudly from the organ, and the great audience rose. Down the centre of the hall, with mace-bearers leading, marched slowly to the platform a small procession with H.R.H. Prince Arthur of Connaught. After a short pause, the audience standing, PRINCE ARTHUR read out his speech very slowly and distinctly.

He said it was not necessary for him to say what very great pleasure it afforded him to be present to welcome, in the name of the King, the Patron of the Congress, the representatives of all branches of medical science from every quarter of the globe. His Majesty had commanded him to express his earnest hope that such international meetings might conduce to the advancement of medicine and to the general welfare of mankind. His late Majesty King Edward had opened the Congress in London in the year 1881, when he was Prince of Wales, and it was a source of peculiar satisfaction to himself to have the privilege of following in his uncle's footsteps. His Royal Highness then pointed out that the Congress, though meeting in London, had for its host Canada, Australia, New Zealand, South Africa, and India, all of whom were represented on the various committees, together with Englishmen. It was the British Empire, and not the United Kingdom, which was welcoming this Congress, and carrying out the Imperial ideal. He had some experience in international exhibitions, and was fully sensible of the good which they did, and had done, in promoting relations with foreign countries, and therefore he was convinced that even greater benefits might result from such a Congress as this, which afforded opportunities for its members to acquire and impart the finest knowledge to one another in the mutual exchange of ideas. In conclusion, Prince Arthur welcomed the members of the Congress to London, adding that His Majesty the King was very pleased they were to be guests at Windsor.

Sir EDWARD GREY, welcoming the Congress on behalf of the Government, said Viscount Morley had already expressed the feeling of the Government, and he associated himself entirely with the words used by the Lord President. He deeply admired the work with which the Congress was associated, and the wonderful advances which medical science had made within living memory. So far as the public was concerned, opposition to scientific discoveries had given way to expectation; and as regarded the sciences of medicine and surgery, the public was not only teachable but also well disposed and entirely grateful. Therefore, the Sovereign, the Government, and the Nation welcomed the members of the Congress with the greatest cordiality.

The President of the Congress, Sir THOMAS BARLOW, then delivered his Presidential Address, which will be found on p. 363 of this issue of THE LANCET.

Dr. W. P. HERRINGHAM, the Secretary General, was quite brief in his observations and very warm in the praises of his staff and of the good work they had done in the organisation of the Congress.

Now the great procession of nationalities began—a traditional but wearisome formality. Dr. William Thayer, United States of America, led the way. He spoke of the inspiring emotion of such a scene, how it helped to realise the unity of science. Then in alphabetical order came the Government delegates of Austria, the Argentine Republic, Professor Paul Héger for Belgium, and the representative of Brazil. By this time the audience began to melt away, but the procession of nations still continued. Then came Cuba and Denmark, and the monotony was now broken by the melodious voice, the perfect articulation, and choice language of Professor Landouzy, speaking on behalf of France. He alluded to the universities and colleges of France, which, in harmony with those of England, had done so much day by day to fortify the *entente cordiale* they had inspired. Then he praised the many object-lessons to be learnt in England, where, for the preservation of public health, laws of expropriation had swept away insanitary areas, and other laws had enforced insurance against sickness. Germany, Guatemala, Holland, Hungary, Japan, Italy, Siam, Mexico, Monaco—whose Prince had done so much for the promotion of science—Norway, Portugal, Russia, Spain, Sweden, Switzerland, in all 25 nationalties, were represented by speakers, who each in turn delivered speeches. Those who spoke briefest were the most cordially applauded.

There remained to hear the President of the Permanent International Commission on Congresses, which for the first time had accomplished its newly instituted mission. He described its organisation, its headquarters at Amsterdam and the Hague, and read the names of the representative committee. This was done both in English and in German.

Finally, Professor LUCAS-CHAMPIONNIÈRE spoke on behalf of the International Association of the Medical Press. He thanked the organisers of the Congress for the facilities given, but confessed to a sense of alarm at the immense proportions of the Congress. On behalf of the press he appealed to the members to send in summaries of their speeches and communications if they did not desire to be overlooked in the accounts published by the papers.

This brought the proceedings to a close a few minutes before 1 o'clock. A loud voice rang out "clear the way," and the Royal procession marched out of the hall in the same order and with the same ceremony as they had entered. By this time, however, at least two-thirds of the audience, wearied by the repetition of thanks expressed in 25 speeches and hungering for lunch, had already disappeared. This procession of nationalities is a tradition that needs a modernising and abbreviating reform.

THE ADDRESS IN MEDICINE.

The Address in Medicine was delivered by Professor Chauffard on Wednesday afternoon in the Albert Hall. It will be found published in full on p. 365 of this issue of THE LANCET.

Considering that the address was delivered in French, there was as large an audience as could be expected. About half of the floor of the vast hall was occupied, and certainly among the thousand or more persons present the most distinguished of the Congressists would have been found. The French and Belgian members were there in full force, and there were numerous representatives of the other nationalities, as well as many British members. (It is noticeable, by the way, that quite a large number of our compatriots can now speak and understand French, though we still as a nation must admit that we generally expect the foreigner to address us in our tongue.)

Sir Thomas Barlow presided and presented Professor Chauffard to the audience. Before reading his paper the learned professor expressed his gratification and his gratitude to the organisers of the Congress. He said the number of French medical men who had come to London on the present occasion was especially large. Their object was not only to exchange the results of their scientific labours. Such gatherings strengthened the links that were already very close between the members of the medical profession, and in this way promoted the unity of science.

Professor Chauffard's paper was listened to with great attention, and especially towards the end was punctuated with applause. Cheering was elicited by his quotation of the figures from the Pasteur Institute showing how the fatal results of rabies had been reduced, and all the statistics indicating successful treatment of different diseases and the reduced death-rates resulting from modern methods were received with discreet applause.

THE SECTIONS.

The work of a number of the sections began on Wednesday afternoon, the proceedings being, in some cases, introduced by an address from the sectional President. This plan was adopted by Sir David Ferrier in the Neurological Section, in the Ophthalmological by Sir Anderson Critchett, in the Dermatological by Sir Malcolm Morris, and in the Section of Radiology by Sir Mackenzie Davidson. In the Surgical Section Sir Watson Cheyne prefaced the proceedings by a brief address on the Development of Surgery under Listerian

Doctrines, and in the Section of Physiology Sir Edward Schäfer, the President, asked the meeting, with success, to record a vote declaring the value of research by animal experimentation. The various sectional meetings will be reported in THE LANCET of next week.

INTERNATIONAL ASSOCIATION OF THE MEDICAL PRESS.

The Fourth International Congress of the Medical Press met on Tuesday, August 5th, in the Jehangir Hall of the Imperial Institute. Some 50 representatives of the foreign and British medical press were present, and the proceedings commenced a few minutes after 11 o'clock.

The Morning Sitting.

Dr. LUCAS-CHAMPIONNIÈRE, President of the Association, opened the proceedings by welcoming the representatives and expressing his regret that they did not meet oftener, for there was much useful work to be done. Former congresses were badly reported, but the association had effected great improvements in this respect. The papers read were systematically collected and placed at the disposal of the press.

Dr. SQUIRE SPRIGGE, on behalf of the British Branch of the International Association, said:—

MESSIEURS,—Pardonnez-moi si je m'exprime très imparfaitement (pour ne pas dire très mal) en français. Je n'ai que peu de choses à dire. M. le Secrétaire Général, Dr. Raoul Blondel, a inscrit sur l'ordre-du-jour un rapport provenant du Président de l'Association Britannique, et j'aurai dû expliquer ce que nous, les journaux anglais, ont pu faire pendant l'année passée pour le monde et le journalisme médicaux. Je n'ai pas la prétention de faire mon modeste rapport en français. Mon ami, et votre ami, M. Adolphe Smith, m'a promis qui il traduira pour vous, cette histoire précise de notre ouvrage. Continuing in English, Dr. Sprigge explained that for more than a year and a half the British medical press had been involved in political action to an unprecedented extent. That the intervention of the medical press had been accepted as useful and necessary by the public and the great lay organs of the press was, he considered, a remarkable advance in the position of medicine and the medical press. It was immediately recognised that the efficacy and the virtues of a great modern attempt at social legislation revolved round the question as to whether or not the medical profession would and could meet the responsibilities which the Insurance Act threw upon them. He did not propose to discuss the Act at all, but only to mention the part which the doctors played during its passage through Parliament. Throughout it was seen that the whole working of the Act depended on the medical profession, who alone could give the medical benefits assured to their fellow citizens; and the medical press insisted that good service could only be obtained if good terms were given. Dr. Dawson Williams and the *British Medical Journal* had admirably voiced the official views of the medical profession. The other journals, including THE LANCET, were able to criticise both the Act and the profession in a way which the organ of the British Medical Association could not; but they all fell into line in demanding a drastic revision of the first proposals made. The lay press recognised the leadership of the medical journals. Considerable improvements in the proposed law were thus brought about. Thus medicine became a real force in the politics of the country. At the same time, he went on to say, the ordinary scientific work of medical journalism had not been neglected.

Dr. RAOUL BLONDEL, general secretary of the association, then read his report covering the ground since the last Congress met at Budapest on August 27th, 1909. He reviewed the many questions that had been discussed since the permanent international committee of the association met at Rome on April 4th, 1912, with the assistance of the Association of the Italian Press. In Italy excellent results had been obtained by giving the right to those papers which belonged to the association to use a seal, and this served as a recommendation or guarantee.

After a few matters of minor importance had been dealt with, Dr. BLONDEL read his report on Medical Terminology, published in our columns this week (p. 413).

Luncheon with THE LANCET.

When Dr. BLONDEL had concluded his paper, the Congress adjourned for the luncheon given by the Editor of THE LANCET to the members of the Congress at the Hyde Park Hotel, Knightsbridge. After luncheon Dr. SQUIRE SPRIGGE invited the guests to raise their glasses in honour, not only of His Majesty King George V., but of all the Sovereigns and Chiefs of State of the nations represented at the Congress. In a few words he also gave the next toast, "The Prosperity of the International Association of the Medical Press," coupling the toast with the name of its President and its Secretary, Dr. Raoul Blondel.

Dr. LUCAS-CHAMPIONNIÈRE said that he was accustomed to British hospitality. That quality was an old and esteemed friend of his. To-day they were the guests of THE LANCET, a huge paper that carried medical news to all countries, but he had not been aware that it was also able to provide a *menu* so complete as to render speech difficult. It had been an extraordinarily laborious year for the British medical press, and they must congratulate all those concerned on the good work accomplished. To some extent they had to defend the medical profession against the whole country, for the real questions at issue were not well understood. Doctors were sometimes reproached for pursuing a money-grubbing policy. In reality this was a policy of honesty, for we could not expect honesty from those who were exploited and underpaid.

Dr. BLONDEL said that, as it was necessary to be brief, he would simply say *merci*.

Dr. SQUIRE SPRIGGE in his turn confessed that he could not be quite so brief in reply, as he was constrained to say *merci beaucoup*.

The Afternoon Sitting.

The afternoon sitting of the Congress was held in the room adjacent to that where the lunch had been served, kindly placed at the disposal of the Congress by the management of the Hyde Park Hotel. Dr. LA TORRE (Italy) and others entered into the details of Dr. Blondel's paper on Medical Terminology. An interesting little debate revealed that difficulties often arose in various countries through the anomalies detailed by Dr. Blondel, and that even the gravest mistakes might occur. On behalf of the British section, it was moved that Dr. Blondel's report be sent to each nationality inviting criticisms and suggestions, which were to be forwarded to the general secretary within 12 months' time. Dr. Blondel suggested that he might add to his report a long list of names that should be altered and other proposals. It was ultimately decided that he might do this on his own individual responsibility, but that the Congress had only heard Dr. Blondel's report, which alone should constitute the official communication whereon each nationality could be asked to found criticism. The committee would then collate the various opinions.

Dr. DÉJACE (Belgium) said that Dr. Blondel's report should be published in as many medical journals as possible, and this in itself would be a great step in the right direction, for it would enlighten the whole profession as to the question at issue. Medical journalists, he said, had to make known what was acceptable and not acceptable, and he considered that above all things the tendency to give personal names to diseases should be resisted. The name of a disease should convey some notion as to the nature of the disease, and not record the person who is supposed to have discovered it first.

The Congress having agreed to send out Dr. Blondel's report regarding Medical Terminology on the lines suggested above,

Professor POSNER, editor of the *Berliner Klinische Wochenschrift*, presented a report on the Responsibility of Medical Journals with Respect to Advertisements. This was a very interesting communication. It did not lead to the discussion that might have been expected, but on all hands it was felt that gratitude was due to Professor Posner for making his report, and it is hoped that in the future some concerted action may result.

Then some explanations were given concerning the organisation of the Press service at the forthcoming International Congress of Medicine.

Finally, Dr. Déjace was elected President of the Association, on the resignation of Professor Lucas-Championnière, and Dr. R. Blondel and Dr. Dawson Williams were re-elected

general secretary and treasurer respectively. The Congress decided to meet again at the next International Congress of Medicine; while it was agreed that the International Committee of the Association should take advantage of the first important congress in the medical world, and hold a session at the same place and date.

This concluded the work in hand, and the Congress brought its sittings to a close.

THE EXHIBITION.

The exhibition of surgical appliances, drugs, and special foods was formally opened by Sir Thomas Barlow on Tuesday, August 5th, and it will remain open to professional visitors until Tuesday next. The vestibule, hall, and corridors of the Imperial Institute afforded ample accommodation for the exhibits, which, generally speaking, are of an unusually interesting description. The spaces are stocked with groups of fine pharmaceutical products, electrical apparatus, optical apparatus, surgical instruments, sanitary appliances, foods, and many other objects of interest to medical men.

The exhibits are in many instances distinctly scientific in character, and particularly those which demonstrated the advances made in electro-therapeutics, X ray work, microscopical manipulation, and bacteriological methods. One of the most interesting sections is that devoted to electrical apparatus. There is here abundant opportunity for examining the ingenious apparatus recently devised for improving the applications of X rays, while many examples are shown of the modern developments which have taken place in the construction and design of high-frequency apparatus. The intensive diathermy system of Professor D'Arsonval attracted considerable attention, and the appliances utilising radioactivity in treatment as well as radiant heat were also interesting.

The section illustrating surgical appliances, instruments, operating-tables, and aseptic furniture offer a wide field for the surgeon's inspection. The individuality of the various surgical instruments is almost lost in their profusion. In the display of drugs synthetics are not so much in evidence as are organotherapeutic preparations, while examples of those interesting therapeutic agents, the colloids, prepared by both electrical and chemical methods, are to be seen at more than one stall. Amongst the series shown are colloidal gold, platinum, palladium, rhodium, silver, mercury, selenium, besides colloids of the commonly occurring metals, iron, copper, and so forth. From the number of diseases cited, in the treatment of which the colloids appear to be of service, their therapeutical application is obviously extending. Special foods show no particularly new departure, the starting point of the majority of them being milk protein, gluten, or soluble albuminoids made from meat.

Although by far the greater number of exhibits belong to English firms, some international character is given to the exhibition by the fact that several French, German, and American firms are represented who are showing various standard preparations and manufactures.

In a future issue we propose to reserve some space for a description of many of the objects of interest in the exhibition. There are amongst them a good number which by reason of their merit call for an extended notice.

Medical News.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH AND ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the triple qualification examinations held in Glasgow recently the following candidates were successful:—

FIRST EXAMINATION.

Alexander Balfour Black, Paisley; Donald M'Kenzie Black, Paisley; Michael Campbell, Portglenone; Lloyd William Hughes, North Wales; John Gray Mackendrick Macaulay, Tomintoul; Joseph William Morris, North Wales; Robert Pollok, Dumbarton; and Robert Woodside, Ballynure.

SECOND EXAMINATION.

Cecil Stuart Baxter, Liverpool; John Stewart Marshall Connell, Glasgow; Richard Arthur Cooper, Enniskillen; Andrew Gaston, Belfast; George Melvin Harley, Glasgow; Charles Harris, Greenock; William Paterson Hay Lightbody, Glasgow; Andrew Mathewson, Newton-Stewart; John Robert Beith Robb, Glasgow; and Purishotham Mohaniraj Saptarshi, India.

THIRD EXAMINATION.

Edward Dias, Goa; John Gilchrist, Glasgow; Richard Bridge Lilley, Tynemouth; John M'Cartney, Girvan; James M'Farlane, Paisley; John Martin, Glasgow; Gwilym Llewelyn Pierce, Llangollen; and William Turner, Belfast.

FINAL EXAMINATION.

Roland John Croxford, Glasgow; Ramchandor Kanshosh, India; Cesar Jenaro Lacayo, Granada, Nicaragua; Emanuel Vivian Wesley Mellad, Jamaica; Edward Leo Anthony M'Cardel, Ontario; William Woodburn M'Cowat, Durban, South Africa; Evan Edward Owens, North Wales; Garfield Arthur Platt, Ontario; Valentine Hutchinson Wardle, Bishop Auckland; and John Watt, Glasgow.

VIVISECTION INSPECTORS.—The Home Secretary has received a number of applications from medical men for the two new inspectorships under the Cruelty to Animals Act, 1876 (Vivisection), but it appears that the salary offered (£500, rising by annual increments of £20 to £600) has not secured a sufficient choice of candidates who possess the necessary scientific qualifications required for the work and are not disqualified by the holding of licences under the Act or otherwise. He has therefore decided to offer a salary of £800. The appointments will be for a term of five years in the first instance. Fuller particulars can be obtained from the Private Secretary, Home Office, London. Candidates who have already applied will be reconsidered without any further application. New applications should be sent in not later than August 25th.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The National Insurance Act (1911) Amendment Bill.

STANDING Committee C of the House of Commons on July 31st completed its consideration of the National Insurance Act (1911) Amendment Bill. Mr. J. W. WILSON was in the chair.

Neither Sir PHILIP MAGNUS nor Mr. GODFREY LOCKER-LAMPSON put forward their clauses which affected the medical profession, although in contrary directions.

A new clause was agreed to, giving county councils in Scotland the power to borrow for the purpose of establishing sanatoriums.

Report Stage.

On Tuesday, August 5th, the House of Commons considered the National Insurance Act (1911) Amendment Bill on Report as amended in the Standing Committee. There were a great number of new clauses on the notice paper, but the SPEAKER ruled that the great majority of those were either out of order, as they would impose a fresh charge on the public funds, or that they ought to be moved as amendments to the clauses already in the Bill.

On Wednesday, August 6th, the House of Commons resumed consideration of the National Insurance Act Amendment Bill on the report stage, and later the third reading of the Bill was completed.

The Formation of Local Medical Committees.

Dr. ADDISON moved a new clause which provided for consultation with medical practitioners who had entered into agreements with Insurance Committees. It was in the following terms:—"Where it is made the duty of an Insurance Committee under the provisions of this Act or of the principal Act, or of Regulations made thereunder, to ascertain, in respect of any matter affecting the administration of medical benefit in the area, the opinions and wishes of the medical practitioners who have entered into agreements with the Insurance Committee for the attendance and treatment of insured persons whose medical benefit is administered by the Committee, they shall do so through a committee appointed by such practitioners in accordance with Regulations made by the Insurance Commissioners, and such committee shall perform such duties and shall exercise such powers as may be determined by the Insurance Commissioners and in any area in which within three months of the time of the passing of this Act no Local Medical Committee has been recognised under the provisions of Section 62 of the principal Act, a committee elected in the manner hereinbefore provided shall be recognised as the Local Medical Committee for that area."

Sir PHILIP MAGNUS observed that this was a highly contentious clause, which he thought had better be withdrawn.

Dr. ADDISON replied that he would not consider it highly controversial. Under Regulation 42 made under the principal Act it was provided that in respect of the accounts of medical practitioners, which were to be rendered quarterly, before payment of the balance the Insurance Committee should submit the accounts to a committee appointed by the medical profession, which should have power to disallow or reduce any item in the accounts submitted to it. It was a committee which Insurance Committees would in the future have to rely on more and more. There were other questions besides drugs and

accounts with which it would have to deal. There were questions relating to agreements and mileage and matters of complaint affecting practitioners on the panel. A committee of this kind could be made very useful, and he believed that throughout the country the arrangements set up in the Regulations and under the Act were working quite smoothly. Of course, there were some districts where it was not so, and one of these was London. It was a great drawback to the smooth working of the Act if Insurance Committees were not able to rely on the advice and assistance of some such committee, because owing to the phraseology of the principal Act one had not been set up. Section 62 of that Act set out that the Local Medical Committee was to be representative of the duly qualified medical practitioners resident in the county or county borough. In the case of London there was a large number—it was estimated some thousands—of medical men who were not really in general practice and who were in no way concerned with National Insurance, and never would be. Many of them were university men, medical men retired from the service, and a large number were consultants and various kinds of specialists. If a committee had necessarily to be representative of medical men resident in such an area, great difficulty would arise. There were more than 5000 medical men in London, and about 1500 were on the panel. This meant that a medical committee might be got which did not lend itself to the smooth working of the Act, and even, as was the case in London, might endeavour to frustrate that smooth working. At present in London no Local Medical Committee was constituted, and the reason that none was recognised was because a great deal of friction had been fostered, he was afraid by a number of men who had no special interest in the Act at all. To give an example of the kind of thing which had occurred in London he would mention one circumstance. Some time ago, in consequence of the efforts of a good many people to set up a Local Medical Committee in London, a meeting was arranged, presided over by a gentleman who was generally trusted. This was the proposal which the men who were outside the panel system in London, led by a number of men whom he was afraid that nothing would placate, rejected. It was proposed that 29 men on the London Local Medical Committee should be appointed by medical men on the panel and 29 by medical men off the panel, and that 15 others should be appointed by medical men connected with the various hospitals. They actually rejected that as an unreasonable proposal. For his part he rejoiced that they did. He thought that it would be very improper to limit the representation of the medical men who were doing the hard work and having all the responsibility in London to such a number on a committee of that kind. He was quite sure that in course of time the difficulties would be smoothed away, and that an amicable adjustment of things would be arrived at. It was necessary that the Insurance Commissioners should have some Committee which they could recognise in London, for example, and for that reason he suggested that they should be given the power to recognise the Practitioners' Committee on the Local Medical Committee in such an area if necessary. His proposal was only designed to enable the Commissioners and the Insurance Committee to deal with all the intricate medical questions which arose in every area, with a properly constituted Medical Committee. He hoped that it would not be necessary to fall back on the proposals in his clause, if it were carried.

Sir PHILIP MAGNUS remarked that the proposed new clause would make a very considerable change in Clause 62 of the principal Act. The latter clause required that any Local Medical Committee should be representative of the duly qualified medical practitioners resident in the county or county borough, and this new clause proposed absolutely the reverse—namely, to allow a Medical Committee to consist only of those members who were at the time on the panel.

An honorable Member: No.

Sir PHILIP MAGNUS: It is so. He admitted that there might be cases where this proposal was necessary, but he thought it rather doubtful. He should like to see some arrangement made by which such committee could act provisionally until a more fitting committee was appointed. He should suggest as an amendment to substitute six months for three months, so as to give more time for the possibility of arranging for a Local Medical Committee.

Dr. ADDISON: I shall be glad to accept that.

Sir PHILIP MAGNUS: Then I shall be prepared not to oppose the clause if six months be substituted for three.

Sir H. CRAIK said that he entertained a much stronger objection to this clause than did his honourable friend (Sir P. MAGNUS), and if that objection were not removed he must consider that the bargain made by the Secretary to the Treasury on the previous day had been broken. By the principal Act the Local Medical Committee was to be representative of the whole medical profession. In London there had been a wide difference of opinion in the medical profession. There were many points of discussion between those who had gone on the panel and those who, conscientiously believing that they were following the right course, refused to go on it. Because these differences were not settled it was now proposed that there should be appointed a Local Medical Committee—not as was laid down under the principal Act representative of the whole medical profession, but constituted only by those who had taken one side in the struggle. If that was the case, it was certainly going very strongly indeed against a very important provision of the principal Act, guaranteeing the security of the medical profession. He said distinctly that he looked upon this as a breach of the understanding that this Committee was not to introduce into the Bill anything injurious to the medical profession, and unless this would be changed by something which the Secretary to the Treasury would say, he must stand on his rights and insist upon discussing all the clauses that were on the notice paper on this point.

Mr. MASTERMAN replied that he would appeal to the honourable Member that this proposed new clause could not be injurious to the medical profession. It was designed to meet a difficulty which had never been foreseen when the principal Act was passing. It was very much to the advantage of the medical profession that there should be some sort of statutory committee to consult with on medical matters. In fact, he thought that it was one of the things which those who represented the medical profession were most anxious should be put into the Act of 1911. His honourable friend (Dr. ADDISON) had pointed out that there were certain districts, certainly very few in number, where no Local Medical Committee existed under the conditions laid down in the statute. He therefore asked that a Medical Committee of those who were working the Act should be recognised. What could be fairer than that? They had the experience and the knowledge connected with the working of the Act. For his own part, he believed that it was the intention of Parliament that those who were working the Act should be those who would be electing the Local Medical Committee. His honourable friend had satisfied the objection of the honourable Member for London University by agreeing to accept six months instead of three. He would suggest a further alteration to make the clause perhaps entirely non-controversial; that was, at the end of the clause to substitute "may" for "shall," so that it should read "may be recognised as the Local Medical Committee for that area." If these two changes were made, it might be possible to obtain a Medical Committee of all the medical men, panel and non-panel. But if that was not to be attained there must be a Medical Committee composed out of the panel to negotiate with the Insurance Committees. Otherwise there would be no Local Medical Committee, and the insured persons would suffer.

Mr. GLYN-JONES expressed the opinion that the clause could not possibly worsen the position of the medical profession. It was absolutely necessary for the purpose of working the Act.

Sir H. CRAIK said that it was not the appointment of a committee to which he was objecting. What he objected to was that the committee proposed in the new clause would in certain circumstances be recognised as the Local Medical Committee dealing with interests that might appertain to the whole of the medical profession. If the words "six months" were substituted for "three months," and "may" substituted for "shall," and if those interests for whom he was acting were satisfied with that, he was ready to withdraw his opposition, but he must reserve the right, if he found that this was not satisfactory, to raise the question again on the report stage.

Mr. HAMILTON mentioned that he had received letters from the medical profession in Manchester about this amendment which they opposed very keenly.

Mr. MASTERMAN: It does not apply to Manchester.

Mr. HAMILTON: Some of the medical men there also practise in Cheshire. There is a very strong feeling in the district that it is a breach of faith with the profession on the part of the Government.

Mr. MASTERMAN: There is a Local Medical Committee recognised in Cheshire and Manchester and, indeed, in nine out of ten of the districts concerned.

The clause was then read a sixth time, "Six months" was substituted for "three months" and "may" for "shall," and the clause as amended was added to the Bill.

A new clause to permit Insurance Committees to contribute to the administrative expenses of medical and pharmaceutical committees was also agreed to and embodied in the Bill.

Alternative Arrangements for the Panel System.

Mr. RAMSAY MACDONALD moved the following new clause (alternative arrangements for the panel system):—"If the Insurance Commissioners are satisfied that the insured persons or any considerable proportion of them within an area, or part of an area, are not receiving satisfactory medical treatment under the panel system, the Commissioners may authorise the Insurance Committee to make, or may themselves make, such other arrangements as will secure to insured persons within the area, or part, such better medical service as is practicable having regard to the funds available for the purpose, or arrangements whereunder insured persons within the area, or part of the area, may be required to make their own arrangements for receiving medical attendance and treatment, including medicines and appliances, and whereunder the Insurance Committee or the Insurance Commissioners undertake to pay the cost of such medical attendance and treatment, or such part thereof, as may be practicable having regard to the funds at their disposal for the purpose." The honourable Member said that the clause was meant to give to the Insurance Committees when they had received the sanction of the Commissioners, power to deal with those very few

cases where, owing to certain local difficulties, the panel system had broken down. The dislocation which had been caused in several instances by the breakdown of the panel system was serious, and he thought the method he proposed was the fairest that could be adopted.

Mr. H. LAWSON remarked that the clause seemed to him to tinker with the situation. There were many cases in which the panel system had broken down. In the East-end of London there had been the greatest dissatisfaction with the working of the panel system. There had been a great paucity of panel doctors and the hardships had been considerable. What had saved the situation was the fact that the doors of the London Hospital had not been shut against a single insured person. The proposed new clause gave a wide discretion. It made a great change in the bargain between the Government and the doctors in regard to the panel system.

Mr. MASTERMAN said that so long as the panel system was satisfactory the Government contemplated that it should continue. But if in any district the panel system did not supply the insured persons with medical treatment, for which they had a right to ask, then there must be an alternative. There was an alternative in a sense in Section 15 of the principal Act, but it was cumbrous and roundabout in operation, and he would suggest to the Committee that, being placed in the position of having to provide an alternative, honourable Members would be well advised to adopt the proposed new clause.

Mr. H. W. FORSTER considered that the powers already given in the principal Act were sufficient.

After considerable discussion,

Mr. RAMSAY MACDONALD withdrew his proposed new clause. He understood that there was a general agreement that the intention which honourable Members were trying to carry out should be carried out on report. The intention was that all insured persons should have medical benefit on the scale of, and in accordance with, the provisions of the principal Act. What had influenced him were the arguments made against certain words which had been introduced into the clause, and which it was suggested would lower the standard of medical treatment to which insured persons were entitled.

The proposed new clause was then by leave withdrawn.

Mr. RAMSAY MACDONALD moved a new clause to provide alternative arrangements for the panel system. It was in the following terms:—

"If the Insurance Commissioners are satisfied that the insured persons or any considerable proportion of them within an area, or part of an area, are not receiving satisfactory medical treatment under the panel system, the Commissioners may authorise the Insurance Committee to make, or may themselves make, such other arrangements as will secure to insured persons within the area, or part, such better medical service as is practicable, having regard to the funds available for the purpose, or arrangements whereunder insured persons within the area, or part of the area, may be required to make their own arrangements for receiving medical attendance and treatment, including medicines and appliances, and whereunder the Insurance Committee or the Insurance Commissioners undertake to pay the cost of such medical attendance and treatment upon such scale as they may determine with the approval of the Commissioners so calculated that the medical attendance and treatment so secured shall be of a quality not inferior to that provided under the panel system."

The honourable Member said that the idea of the clause was that where the Commissioners or the Insurance Committees were of opinion that the insured persons were not receiving satisfactory medical benefit under the panel system, the Commissioners might authorise the Insurance Committee to make other arrangements which would ensure better medical service being given to the insured persons. The services must be better than those in existence for the time being under the panel system. There had not been sufficient experience to say what form the new arrangements should take, but it was not the time to supersede the panel system generally. The clause was simply to give the authorities powers to give the medical services promised under the principal Act and to overcome unreasonable difficulties which in some districts the working of the panel system presented.

Mr. G. ROBERTS seconded.

Mr. MASTERMAN said that the clause was discussed to a considerable extent in Committee, and had found sympathy from all parties. He hoped that the House would accept it. It did not touch the ordinary panel system.

Mr. H. W. FORSTER pointed out that the Insurance Commissioners already had powers under Clause 15 of the principal Act in making provision for medical benefit when they were satisfied that arrangements could not be made in a district under the ordinary panel system.

The clause was agreed to and added to the Bill.

Medical Benefit.

Clause 10 of the Bill provides that: "No voluntary contributor whose total income from all sources exceeds £160 a year shall be entitled to receive medical benefit, but in that case the weekly contribution which would otherwise be payable by him should be reduced by 1*d*."

Mr. GOULDING moved an amendment that the clause should be limited to contributors becoming insured after the passing of the Act.

After some discussion Mr. LLOYD GEORGE said that this clause was the result of very protracted negotiation with the medical profession. He thought that the profession were right in saying that doctors should not attend men who might be earning 00, 00, or 00 a year, at the rate of 7*s.* per annum. He had undertaken to put in the Clause in the first Amending Act and he felt bound in honour to stand by it. He thought the demand of the medical profession was very reasonable.

The amendment was rejected by 228 votes to 100.

Mr. GODFREY LOCKER-LAMPSON then moved as an amendment to add the new following subsection: "An insured person, on satisfying the Local Insurance Committee that he desires the services of a medical practitioner who has not entered into arrangements with such committee under Subsection (1) of Section 15 of the principal Act, and that he understands the consequences of making arrangements under Subsection (3) of that section, shall be at liberty to take such services under that subsection." He said that the object of this subsection was to give a free choice of doctor. This free choice the country had been led to expect that insured persons would get, but it had not been given.

Sir ROBERT FINLAY supported the amendment on the ground that it more fully carried out the intentions of Parliament.

Mr. MASTERMAN, in resisting the subsection, regretted that an attempt was being made to disturb the balance between the Approved Societies and the medical profession. The effect of the amendment would be to smash the panel system, to lose the services of 18,000 doctors, and to violate the principle that the Insurance Committees were set up to carry out a local autonomy suited to the needs of the particular districts which they represented. He went on to point out that in some districts where the free choice of a doctor would mean a medical institute, the doctors were asking the Government to stop this free choice. If the amendment was carried it would mean the Friendly Societies trying to reassert the old Friendly Society control which the House had helped the doctors to get out of.

After considerable discussion the amendment was rejected by 245 votes to 114.

Mr. BATHURST moved an amendment to secure that medical benefit was only to exclude services of specialists. It was in the following terms:—

"The Regulations of the Insurance Commissioners shall provide for arrangements being made by every Insurance Committee for the provision of adequate medical attendance and treatment, as required by the principal Act for insured persons entitled to medical benefit whose condition does not require the services of a specialist or consultant."

The honourable Member stated that in certain districts medical men had been declining to treat certain cases of a comparatively simple nature on the ground that these really required the services of a specialist.

Mr. MASTERMAN resisted the amendment. If there was a refusal of medical men to give the ordinary services of a practitioner, the proper course was to see that the terms of the contract were enforced.

Sir PHILIP MAGNUS hoped that the amendment would be withdrawn. There was nothing in it which was not contained in the principal Act. In these matters the doctors must be trusted.

The amendment was withdrawn.

Sir PHILIP MAGNUS moved an amendment to provide that: "No insured person shall be entitled to require attendance by any practitioner other than the practitioner selected by or allotted to the insured person."

Mr. MASTERMAN asked the honourable gentleman not to press the amendment.

The amendment was then withdrawn.

The House had reached the end of Clause 12, when the debate was adjourned.

Medical Benefit in Ireland.

The report of the Committee appointed to consider the extension of medical benefit under the National Insurance Act to Ireland has been published, but its recommendations are not altogether unanimous. In the first place it is stated by the Committee that they are of opinion that unless terms can be arranged with the medical profession before a Bill is introduced legislation should simply provide for raising the rates of contribution in the six county borough areas to the English level, and that the proceeds of the additional rate, together with the special Exchequer grant of 2*s.* 6*d.* per insured person, should be paid over to the societies, who should be empowered to enter into arrangement for providing medical benefit, either for members and dependents or for members only if they see fit, or failing such arrangements to give other benefits to the value of the additional contribution.

In the opinion of the majority the area for medical benefit should include the whole industrial population for which the borough is the centre. Purely agricultural areas should as far as possible be excluded.

In the opinion of the Committee the societies should be left free to enter into inclusive contracts for drugs, attendance, and treatment with medical practitioners in accordance with the common practice before the National Insurance Act came into operation. This is recommended as a provisional and interim arrangement pending the adoption of a scheme of medical benefit for Ireland as a whole.

Such a general scheme will, the Committee thinks, necessarily involve the creation of a State Medical Service. The establishment of such a service by the State side by side with existing dispensary service would even in the larger urban centres necessarily result in overlapping and consequent waste of money, while in the rural districts it would be wholly impracticable. In the view of the Committee, therefore, no steps can be taken in the direction of establishing a State Medical Service except in conjunction with a comprehensive reform of the Poor-law.

Several of the members of the Committee dissent from the views expressed in the Majority Report signed by Lord ASHBY ST. LEGERS and five of his colleagues.

Conscientious Objectors.

Mr. ALDEN moved a new clause as follows:—"Where any person satisfies the Insurance Committee that on conscientious grounds he does not desire treatment by a duly qualified medical practitioner, his right to medical benefit shall be suspended and the Insurance Committee shall pay to him in each year the sum equal to the sums payable to the Committee in respect of his medical benefit." The honourable Member mentioned that the clause was intended to meet the case of a few people who had conscientious scruples against medical practitioners.

After some discussion the clause was rejected without a division.

Metropolitan Asylums.

On the motion of Mr. CASSEL the following new clause was adopted and added to the Bill: "Notwithstanding anything in any Act, it shall be lawful for the managers of the Metropolitan Asylums district, with the sanction of the Local Government Board, to enter into agreements with any county council, or with the consent of the county council, with any authority in a county for the reception of insured persons and their dependents suffering from tuberculosis or any such other disease as the Local Government Board with the approval of the Treasury may appoint under Section 8 of the principal Act, into hospitals provided by the managers, and for this purpose the managers shall not be deemed to be a Poor-law authority. Any such agreements may provide that the cost of the treatment of the patients so received, or some part thereof, shall be borne otherwise than as provided by Section 80 of the Public Health (London) Act, 1891."

Other new clauses were considered, and the Committee stage having been completed, the Bill was ordered to be reported with amendments to the House.

HOUSE OF COMMONS.

WEDNESDAY, JULY 30TH.

Notification of Venereal Disease.

Mr. F. HALL (Dulwich) asked the President of the Local Government Board whether notification was required under the provisions of the Public Health (London) Act, 1891, or Orders made thereunder, in cases of venereal disease.—Mr. BURNS replied: The answer is in the negative.

The Treatment of Tuberculosis.

Replying to Mr. ASTOR, Mr. BURNS wrote that 94 councils had submitted to the Local Government Board schemes for providing treatment for persons suffering from tuberculosis, making no distinction as to whether such persons were insured or non-insured. According to his information, 24 county councils and 28 county borough councils had appointed whole-time tuberculosis officers, and four county councils and 11 county borough councils part-time tuberculosis officers. The part-time tuberculosis officers were men wholly engaged in public appointments, but whose whole time was not given to the office of tuberculosis officer. It must not be assumed that all the remaining councils had not yet appointed tuberculosis officers, because application of the Board's approval of the appointment was sometimes not made until after the officer had been appointed. In the metropolis a certain number of whole-time tuberculosis officers had been appointed by voluntary bodies.

Local Authorities and Sanatoriums.

Mr. ASTOR asked the President of the Local Government Board how many councils of counties or county boroughs owned sanatoria; how many were now building sanatoria themselves or in conjunction with other councils; and how many neither owned nor were now building their own sanatoria.—Mr. BURNS furnished the following written reply: In many instances the accommodation required by county councils is being provided by agreement at existing institutions. Sometimes this is being done by appropriating for tuberculosis the whole or a part of the institution, and sometimes by the addition of buildings; in many instances the institution is owned by some other local authority or by a voluntary body and not by the county council. The number of councils of counties and county boroughs who themselves own, or have acquired by lease, buildings which are used for the reception of persons suffering from tuberculosis is 52. I am not able to state exactly the number of councils who are actually building at the present time, but the Local Government Board have approved the acquisition of land for the erection of buildings in three cases, they have approved of the acquisition of mansions with large grounds in four cases, they have approved of plans for the extension of existing buildings in 16 cases, and in several other cases plans are under consideration. The Board are also aware that 13 councils are now negotiating for the acquisition of sites which have been inspected by the Board's medical inspectors, and approved subject to conditions. As regards the last part of the question, 26 county councils and 24 councils of county boroughs have not at present acquired buildings or the use of beds in existing institutions, but in respect of 18 of these counties and 10 of these county boroughs schemes have been submitted to the Board which include proposals for providing sanatorium accommodation. The foregoing statement relates only to England (excluding Monmouth).

The Royal Army Medical Corps.

In the course of the debate on the Army Estimates Dr. ESMONDE called the attention of the Secretary of State for War to the position of the Royal Army Medical Corps. The health of the army had never been better than it was at the present moment. It was a number of years since an increase of pay had been given to the Army Medical Department, and he had not the slightest doubt that owing to the National Insurance Act there would be considerable difficulty in getting the best of the medical men to join the service. Everyone would agree that the troops should be in the care of the pick of the medical profession, so that their health should be maintained in times of peace. It was necessary that members of the Army Medical Corps should be well equipped surgically where operations had to be undertaken. He hoped that the right honourable gentleman would sympathetically consider the position of the Royal Army Medical Corps.

Colonel SEELY (Secretary of State for War) replied: I have just a word or two to say in answer to the honourable gentleman regarding the Army Medical Corps. It is quite true that the health of the troops has never been better, and one cannot but attribute it in a considerable measure to the remarkable services rendered by the Royal Army Medical Corps. It is not so very long since the army doctor was regarded as inferior in technical and scientific attainments to members of the medical profession elsewhere. But now that is all changed, and I have it on the authority not only of those who direct that corps themselves, but of medical men of great distinction on the civil side, that the Royal Army Medical Corps is second to none in its scientific knowledge, its attainments and devotion to work. Seeing that this great improvement in their knowledge has coincided with this remarkable improvement in the health of the troops, I think it is not unreasonable of the honourable gentleman to ask that we should carefully consider any grievances which they may have, and I promise to give them sympathetic consideration.

THURSDAY, JULY 31ST.

Highlands and Islands Medical Service.

The Marquis of TULLIBARDINE asked the Secretary to the Treasury (1) what was the amount of mileage grant to which the Highlands of Perthshire would have been entitled had they been retained in the Highlands and Islands (Medical Service) Bill, and what increased amount would they now be given, seeing that they had been deprived of the benefits of this Bill; and (2) whether the portion of the mileage grant due to Perthshire would be deducted from the Highlands and Islands grant where it originally figured, or whether it would be treated as an additional burden on the £16,000 already allocated to other districts in Scotland.—Mr. WEDGWOOD BENN (on behalf of Mr. MASTERMAN) answered: The amount assigned to the part of Perthshire covered by the special grant-in-aid of £10,000 is £200. In addition this area will participate in the balance of the grant which has not already been distributed. This scheme of distribution applies only to the present year, and in future years any mileage grant to the area in question in the present year will be out of the mileage fund available for Great Britain generally apart from the Highlands and Islands of Scotland. While the old arrangement continues this part of Perthshire will continue in it, but when the old arrangement terminates Perthshire will come under the new arrangement.

Fatigue in Industrial Occupations.

Replying to Mr. GIBBS, Mr. MCKENNA (the Home Secretary) wrote: The Professor of Physiology at Bristol University has undertaken for the Home Office research work in regard to the measurement of fatigue in industrial occupations, and a grant towards the expenses entailed has been made by the department to the University. No other grant of the kind has been made.

Seamen's Hospitals on Cargo Ships.

Mr. BUXTON (President of the Board of Trade) informed Mr. PETO that 57 ocean-going cargo vessels had been fitted with hospitals for seamen since the issue of the Board of Trade circular to shipowners on the subject. The provision of these hospitals cannot be made compulsory without legislation.

MONDAY, AUGUST 4TH.

Mileage Grants in the Highlands.

In reply to the Marquis of TULLIBARDINE, Mr. MASTERMAN stated that the amounts allocated in mileage grants to the Highlands were as follows:—Inverness-shire £2310, Ross and Cromarty £1560, Sutherland £490, Caithness £250, Zetland £700, Orkney £170, and Argyll £1940.

TUESDAY, AUGUST 5TH.

Banffshire and the Special Mileage Fund.

Mr. MASTERMAN informed Captain WARING that the Scottish Insurance Commissioners had received a representation from medical practitioners in the highland of Banffshire for an increase of the mileage rate on account of bad roads and difficulty of access to many districts. The Commissioners hoped to complete shortly a scheme for the distribution of the sum available from the special mileage fund.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ASKEY, S. G., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

ATTWOOD, H. C., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

BOURDILLON, L. G., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Assistant at St. Thomas's Hospital.

BRANDON, G. N., M.R.C.S., L.R.C.P. Lond., has been appointed Ophthalmic House Surgeon at St. Thomas's Hospital.

BURTON, A. H. G., M.D. Lond., D.P.H. Camb., has been appointed Tuberculosis Officer and Assistant Medical Officer of Health for the Metropolitan Borough of Deptford.

BUTLER, E. N., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

BYWATER, H. HAWARD, M.D. Vict., F.R.C.S. Edin., D.Ch.O. Liverp., has been appointed Assistant Honorary Surgeon to the Liverpool Eye and Ear Infirmary and Assistant Honorary Surgeon to the Eye, Ear, and Throat Department of Wigan Royal Infirmary.

CHAVASSE, A. R., M.B., B.Ch. Oxon., has been appointed Obstetric House Physician at St. Thomas's Hospital.

CLARK, A. J., M.B. Cantab., M.R.C.P. Lond., has been appointed Lecturer in Pharmacology to Guy's Hospital.

CURTIS, HENRY, B.S. Lond., F.R.C.S. Eng., has been appointed Surgeon to the Metropolitan Hospital, Kingsland-road, N.E.

DAUNT, F. E., M.B., B.S. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

DAWSON, H. P., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Physician at St. Thomas's Hospital.

DIGBY, K. H., M.B., B.S. Lond., F.R.C.S. Eng., has been appointed Professor of Anatomy in the University of Hong-Kong.

DOYNE, P. G., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

FOLEY, W. B., M.B., B.S. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

HALLETT, D. B. L., M.B., B.Ch. Oxon., has been appointed Resident House Physician at St. Thomas's Hospital.

HART, W. J., B.M., B.Ch. Oxon., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

HUMPHRYS, F. J., M.B., B.S. Lond., M.R.C.S., L.R.C.P., has been appointed Obstetric House Physician at St. Thomas's Hospital.

LANGRAN, W., L.R.C.P. & S. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Acts for the Axminster District of the county of Devon.

LOCKE, W. LINDSAY, M.B., Ch.B. Edin., has been appointed Senior Medical Radiographer to Guy's Hospital.

LOUGHNANE, F. McG., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

MACRAE, FARQUHAR, M.B., C.M. Aberd., has been appointed Tuberculosis Officer for the County of Aberdeen.

MITCALFE, JAMES, M.D. Brux., L.R.C.P. & S. Edin., has been appointed Medical Officer in charge of the X Ray Department of the German Hospital, London.

MITCHINER, P. H., M.B., B.S. Lond., has been appointed House Surgeon at St. Thomas's Hospital.

PARKINSON, JOHN, M.D., B.S. Lond., M.R.C.P. Lond., has been appointed Special Assistant to the Heart Department of the London Hospital.

PETTY, M. J., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

PICKARD, ELLEN MARY, M.D., B.S. Lond., has been appointed Assistant to the Clinical Pathologist at the Royal Free Hospital.

REECE, L. N., M.R.C.S., L.R.C.P. Lond., has been appointed Resident House Surgeon at St. Thomas's Hospital.

RICHARDS, MAUDE M., M.B., B.S. Lond., has been appointed Assistant to the Clinical Pathologist at the Royal Free Hospital.

SARGENT, E. L. K., M.B., B.C. Cantab., has been appointed Casualty Assistant at St. Thomas's Hospital.

SUTCLIFFE, A. L., M.B., B.C. Cantab., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

SYMONS, W. J. F., M.B., B.C. Cantab., has been appointed Resident House Surgeon at St. Thomas's Hospital.

VINEY, A., M.R.C.S., L.R.C.P. Lond., has been appointed Casualty Officer and Resident Anæsthetist at St. Thomas's Hospital.

WORDLEY, E., M.B., B.C. Cantab., has been appointed Resident House Physician at St. Thomas's Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERGAVENNY, MONMOUTHSHIRE ASYLUM.—Second Assistant Medical Officer. Salary £225 per annum, with board, apartments, washing, and attendance.

AYRSHIRE SANATORIUM, New Cumnock.—Assistant to Resident Medical Officer. Salary £150 per annum, with board and rooms.

BANBURY, HORTON INFIRMARY.—House Surgeon. Salary £100 per annum, with board and residence.

BEDFORDSHIRE COUNTY COUNCIL.—Tuberculosis Medical Officer. Salary £500 per annum.

BELGRAVE HOSPITAL FOR CHILDREN, Clapham-road, S.W.—Resident Medical Officer and Junior Resident Medical Officer for six months. Salaries at rate of £75 per annum, with board, residence, &c.

BIRMINGHAM AND MIDLAND EYE HOSPITAL.—Third House Surgeon. Salary £80 per annum, with residence and board.

BIRMINGHAM, UNIVERSITY OF.—Lecturer on Pathology and Bacteriology in University and Visiting Pathologist to General Hospital.

BRADFORD ROYAL INFIRMARY.—House Surgeon, unmarried. Salary £100 per annum, with board, residence, and washing. Also House Physician, unmarried. Salary £100 per annum, with board, residence, and washing.

BRIGHTON, ROYAL ALEXANDRA HOSPITAL FOR SICK CHILDREN, Dyke-road.—House Surgeon for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

BRISTOL ROYAL INFIRMARY.—House Physician. Salary at rate of £100 per annum, with apartments, board, and laundry. Also House Surgeon. Salary at rate of £100 per annum, with apartments, board, and laundry.

BURNLEY, VICTORIA HOSPITAL.—Second House Surgeon for six months. Salary at rate of £80 per annum, with residence, board, and washing.

CANCER HOSPITAL, Fulham-road, S.W.—First Assistant to Research Department. Salary £350 per annum. Also House Surgeon for six months. Salary £70 per annum.

CANTERBURY MENTAL HOSPITAL, Canterbury.—Assistant Medical Officer, unmarried. Salary £160 per annum, with board, lodging, washing, and attendance.

CARDIFF, KING EDWARD VII.'s HOSPITAL.—House Surgeon for six months. Salary at rate of £60 per annum, with board, residence, and laundry.

CARLISLE, CUMBERLAND AND WESTMORLAND ASYLUM, Garlands.—Junior Assistant Medical Officer, unmarried. Salary £180 per annum, with board, apartments, and washing.

CARLISLE NON-PROVIDENT DISPENSARY.—Resident Medical Officer. Salary £150 per annum, with apartments.

CHESTER GENERAL INFIRMARY.—House Physician. Salary £90 per annum, with residence and maintenance.

COLCHESTER, ESSEX COUNTY HOSPITAL.—House Physician. Salary £80 per annum, with board, residence, and washing.

COVENTRY AND WARWICKSHIRE HOSPITAL, Coventry.—Senior House Surgeon, House Physician, and Junior House Surgeon. Salary of former £120 per annum, and of two latter £90 per annum each, with residence, board, laundry, and attendance.

DERBYSHIRE COUNTY COUNCIL.—Assistant Tuberculosis Officer and School Medical Officer. Salary £400 per annum.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant House Surgeon, unmarried. Salary at rate of £75 per annum, with board and laundry.

DORCHESTER, DORSET COUNTY HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and residence.

DORSET COUNTY COUNCIL.—Two Assistant County Medical Officers. Salary at rate of £250 per annum.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—Assistant House Surgeon. Salary £65 per annum, with board and washing.

DURHAM COUNTY COUNCIL.—Assistant Tuberculosis Medical Officer. Salary £300 per annum.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of 100 guineas per annum, with board, apartments, and washing.

EXMINSTER, DEVON COUNTY ASYLUM.—Junior Assistant Medical Officer. Salary £200 per annum, with quarters, board, and laundry.

GATESHEAD DISPENSARY.—Assistant Medical Officer. Salary £200 per annum.

GLASGOW DISTRICT MENTAL HOSPITAL, Gartloch.—Junior Medical Officer. Salary £150 per annum, with board, lodging, and laundry.

GLOUCESTERSHIRE COUNTY COUNCIL AND GLOUCESTER CORPORATION JOINT COMMITTEE.—Tuberculosis Medical Officer. Salary £500 per annum.

GRIMSBY AND DISTRICT HOSPITAL.—Senior House Surgeon. Salary £100 per annum. Also Junior House Surgeon. Salary £80 per annum, with board, lodging, attendance, and washing.

HALIFAX ROYAL INFIRMARY.—Second House Surgeon, unmarried. Salary £100 per annum, with residence, board, and washing.

HASTINGS, EAST SUSSEX HOSPITAL.—Assistant House Surgeon. Salary at rate of £70 per annum, with residence, board, and washing.

INDIA, IMPERIAL BACTERIOLOGICAL (VETERINARY) LABORATORY, Muktesar.—Assistant Bacteriologist. Also Pathologist. Salary will not be less than £480 per annum.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100 per annum, with board and residence.

LIVERPOOL CITY INFECTIOUS DISEASES HOSPITAL.—Assistant Resident Medical Officer, unmarried. Salary £120 per annum, with board, washing, and lodging.

LIVERPOOL WORKHOUSE HOSPITAL, Brownlow Hill.—Two Resident Assistant Medical Officers. Salary £160 per annum, with apartments and usual resident allowances.

LOWESTOFT HOSPITAL.—House Surgeon, unmarried. Salary at rate of £150 per annum, with board, residence, and laundry.

MANCHESTER, CHORLTON-UPON-MEDLOCK DISPENSARY.—Resident Medical Officer, unmarried. Salary £120 per annum, with rooms and attendance.

MANCHESTER, MONSALL FEVER HOSPITAL.—Third Medical Assistant. Salary £100 per annum, with board, lodging, and washing.

MANCHESTER ROYAL EYE HOSPITAL.—Junior House Surgeon. Salary £80 per annum, with residence, board, and washing.

MANCHESTER ROYAL INFIRMARY.—Accident Room House Surgeon for six months. Salary at rate of £100 per annum, with board and residence.

MANCHESTER, ST. MARY'S HOSPITALS FOR WOMEN AND CHILDREN.—House Surgeon for Gynæcological and Children's Departments. Salary at rate of £50 per annum, with board and residence.

MANCHESTER WORKHOUSE, Crumpsall.—Junior Resident Assistant Medical Officer, unmarried. Salary £110 per annum, with rations, apartments, washing, attendance, &c.

MIDDLESBROUGH, NORTH RIDING INFIRMARY.—Senior House Surgeon. Salary at rate of £100 per annum for first six months and £120 per annum for second six months, with board, residence, and laundry.

NEWCASTLE-UPON-TYNE DISPENSARY.—Visiting Medical Assistants. Salary £200 per annum.

NEWPORT (MON.), ROYAL GWENT HOSPITAL.—Resident Medical Officer. Salary at rate of £100 per annum, with board, residence, and laundry.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—House Surgeon, unmarried. Salary £80 per annum, with board, lodging, and washing.

OXFORD COUNTY ASYLUM, Littlemore, near Oxford.—Assistant Medical Officer. Salary £150 per annum, with apartments, board, and washing.

OXFORD, RADCLIFFE INFIRMARY AND COUNTY HOSPITAL.—Casualty House Surgeon, unmarried, for six months. Salary at rate of £80 per annum, with board, &c.

PARK HOSPITAL FOR CHILDREN, Hither Green, London, S.E.—Two Assistant Medical Officers. Salary £150 per annum, with board, lodging, and washing.

PLYMOUTH, BOROUGH OF.—Tuberculosis Officer. Salary £500 per annum.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Physician for six months. Salary £75 per annum, with board, residence, and washing.

PRESTON, COUNTY ASYLUM, Whittingham, Lancs.—Assistant Medical Officer, unmarried. Salary £200 per annum, with board, apartments, and washing.

READING, ROYAL BERKSHIRE HOSPITAL.—Second House Surgeon. Salary at rate of £80 per annum, with lodging, board, and washing.
ROYAL NAVAL MEDICAL SERVICE.—Twenty-five appointments.
ST. ALBANS, HARTS COUNTY ASYLUM, Hill End.—Second Assistant Medical Officer, unmarried. Salary £200 per annum, with board, lodging, and washing.
ST. GILES AND BLOOMSBURY INFIRMARY, Cleveland-street, Fitzroy-square, W.—Assistant Medical Officer. Salary £150 per annum, with board, lodging, washing, and attendance.
ST. MARY'S HOSPITAL FOR WOMEN AND CHILDREN, Plaistow, E.—Assistant Resident Medical Officer, unmarried, for six months. Salary at rate of £80 per annum, with board, residence, and laundry.
SHEFFIELD INFECTIOUS DISEASES AND TUBERCULOSIS HOSPITALS.—Junior Assistant Medical Officer. Salary £130 per annum, with board, lodging, and washing.
SHEFFIELD ROYAL INFIRMARY.—Two Resident Medical Officers. Salary £70 per annum, with board and residence.
SMETHWICK, COUNTY BOROUGH OF.—Tuberculosis Officer and Assistant Medical Officer of Health. Salary at rate of £500 per annum.
SOUTHAMPTON, ROYAL SOUTH HANTS AND SOUTHAMPTON HOSPITAL.—House Surgeon for six months. Salary at rate of £100 per annum, with rooms, board, and washing.
SOUTH SHIELDS, COUNTY BOROUGH OF.—Assistant Tuberculosis Medical Officer. Salary £300 per annum.
SOUTH SHIELDS, INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.
STROUD GENERAL HOSPITAL.—House Surgeon. Salary £120 per annum, with board, lodging, and washing.
SUNDERLAND, DURHAM COUNTY AND SUNDERLAND EYE INFIRMARY.—Locum for House Surgeon for September. Salary £5 5s. per week.
SUNDERLAND ROYAL INFIRMARY.—House Physician and Two Junior House Surgeons. Salary £90 per annum in each case, with board, residence, and laundry.
SWANSEA GENERAL AND EYE HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and attendance.
WEST HAM AND EASTERN GENERAL HOSPITAL, Stratford, E.—Senior House Surgeon. Salary at rate of £100 per annum. Also Junior House Physician. Salary at rate of £75 per annum.
WEST HAM, COUNTY BOROUGH OF.—Two Temporary Assistant School Medical Officers for six months. Salary at rate of £250 per annum.
WHITEHAVEN AND WEST CUMBERLAND INFIRMARY.—Resident House Surgeon.
WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—House Surgeon. Salary £125 per annum, with board, rooms, and laundry.
WORCESTER GENERAL INFIRMARY.—House Physician. Salary £120 per annum, with board, residence, and washing.
WORCESTERSHIRE COUNTY COUNCIL.—Assistant School Medical Officer. Salary £250 per annum.
WREXHAM INFIRMARY.—Resident House Surgeon. Salary £120 per annum, with board, lodging, and washing.

THE Chief Inspector of Factories, Home Office, London, S.W., gives notice of a vacancy for a Certifying Surgeon under the Factory and Workshop Acts at Manchester East, in the county of Lancaster.

Births, Marriages, and Deaths.

BIRTHS.

DOMINY.—On July 31st, at Southampton, the wife of G. H. Dominy, M.R.C.S., of Milton Abbas, Dorset, of a son.
GABB.—On July 31st, at Cornwallis-gardens, Hastings, the wife of Harry Gabb, B.A., M.B., B.C., of a daughter.
WOODWARK.—On July 31st, at 38, Queen Anne-street, Cavendish-square, W., to Dr. and Mrs. Stanley Woodwark, a son.

MARRIAGES.

SCOTT—DENMAN.—On August 2nd, at St. Mary's Church, Swansea, by the Rev. T. E. Evans, Vicar of St. Matthew's Church, assisted by the Rev. Jones, David Wolseley Scott, L.R.C.S., L.R.C.P. Edin., L.F.P. & S., L.M. Glasg., Pontrhydyfen, Port Talbot, to Miss Gladys Denman, Colwyn Bay.

DEATHS.

HODGSON.—On July 25th, at Peckham Rye, Robert Hugh Hodgson, M.D., L.R.C.P. Edin., M.R.C.S. Eng.
HOLLINGSWORTH.—On August 1st, at Findern Lodge, Spring-grove, Isleworth, Surgeon-General Thomas Smith Hollingsworth, A.M.D., aged 85 years.
KEMPE.—On July 31st, John Arthur Kempe, F.R.C.S., Edgbaston, Birmingham, aged 62 years.
KEYES.—On August 2nd, at Weymouth-street, W., William Baldwin Keyes, L.D.S., D.D.S., aged 51 years.
MIDDLEMISS.—On August 4th, at his residence, Wear Court, Darlington, George Middlemiss, M.D. Durh. 1889, L.R.C.P. Edin. and L.M. 1871, L.F.P.S. Glasg. and L.M. 1871, late Surg.-Col. (V.D.) 1st Durh. V.B. L.I., and Army Med. Reserve of Officers, aged 68 years.
SIMPSON.—On July 31st, at Thornton Heath, Robert Arthur Simpson, Surgeon, formerly of the Royal Navy and of New South Wales, aged 60 years.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

STUDENTS' NUMBER OF THE LANCET.

INFORMATION intended for the Students' Number of THE LANCET must be sent WITHOUT DELAY, addressed to the Sub-Editor, and marked on the envelope "Students' Number Only."

SOME WEST AFRICAN VITAL STATISTICS.

INTERESTING returns respecting the vital statistics of non-native officials in West Africa (comprising the Colonies or Protectorates of Gambia, Sierra Leone, Gold Coast, Northern Nigeria, and Southern Nigeria) have been prepared by the Colonial Office, and, by command of His Majesty, presented to Parliament. The first table of the group shows the age distribution of officials in the service on Jan. 1st, 1912, as follows: Central age 25, 283; central age 30, 631; central age 35, 739; central age 40, 394; central age 45, 217; central age 50, 106 (including 5 aged 54, 3 aged 55, 2 aged 56, 4 aged 57, and 1 aged 63); age not known, 1; total, 2371. The second table gives the numbers of deaths and invalidings during the year. The deaths totalled 30—viz.: central age 25, 2; central age 30, 5; central age 35, 12; central age 40, 8; central age 45, 3; central age 50, 0. There were 68 invalidings—viz.: central age 25, 8; central age 30, 19; central age 35, 21; central age 40, 6; central age 45, 8; central age 50, 5. The rates per 1000 of deaths were—at central age of 25, 7·0; ditto 30, 7·9; ditto 35, 16·2; ditto 40, 20·3; ditto 45, 13·8; ditto 50 and over, 0. The rates per 1000 of invalidings were—at central age of 25, 28·2; ditto 30, 30·1; ditto 35, 28·4; ditto 40, 15·2; ditto 45, 36·8; ditto 50 and over, 47·1. Another table shows that the average length of service of those who died during the year was 6 years and 3 months. The average length of service of those invalided was 4 years and 9 months. The average age of those who left the service was 35, and their average length of service on termination 4 years 1 month. The following table shows the deaths and invalidings from 1903 to 1912:—

Year.	Average in service.	Deaths.	Rate per 1000.	Average length of service. Y.	M.	Invalidings, including officers pensioned owing to ill-health.	Rate per 1000.
1903	1259	26	20·6	1	9	181	65·1
1904	1428	39	27·3	3	3	96	67·2
1905	1491	42	28·1	3	6	93	62·3
1906	1553	33	21·2	3	10	95	61·1
1907	1628	29	17·8	4	5	100	61·4
1908	1803	32	17·7	4	0	83	46·0
1909	2015	35	17·3	4	6	114	56·5
1910	2153	44	20·4	5	1	85	39·4
1911	2293	32	13·9	4	7	86	37·5
1912	2409	30	12·4	6	3	68	28·2

In the explanatory notes accompanying the tables it is remarked that the total death-rate in 1912 was 12·4 per 1000, being a decrease of 1·5 per 1000 on the previous year; excluding six deaths due to causes other than disease, the rate per 1000 was 9·9, or a decrease of 1·8 per 1000 on the corresponding rate for 1911. In view of the record low death-rate for West Africa in that year, this continued decrease is highly satisfactory. For the period 1903–12 the deaths numbered 342, giving a total death-rate of 18·9 per 1000, as compared with 19·9 per 1000 for the period 1903–11. If we exclude the 47 deaths resulting from causes other than disease, we have a death-rate due to diseases only, climatic and non-climatic, of 16·3 per 1000 for the period 1903–12. The corresponding rates for the periods 1903–08, 1903–09, 1903–10, and 1903–11 are 19·5, 18·6, 18·3, and 17·3 per 1000 respectively.

A TUBERCULOSIS CAMPAIGN.

Mr. C. E. E. Childers, British Vice-Consul, reports that the Tuberculosis League of Pittsburg has instituted a house-to-house campaign by which all existing cases of disease are traced, and arrangements made to remove the patients to some sanatorium when necessary and to safeguard the health of other inmates of the house, so that the disease may not spread. The league has an instructor, who visits thousands of pupils in the public and parochial schools during the year, demonstrating by charts and lectures the methods of avoiding tuberculosis and preventing it by the adoption of sanitary methods of living, and

it maintains in its own sanatorium a fresh-air school where children of a tubercular tendency pursue their studies in the open air. The dispensary of the league is perhaps a more important organisation than the sanatorium itself. At this dispensary medical examination, advice, and treatment are given to all applicants with as little interference as possible with the daily occupation of the persons under treatment. Its laboratory is now known by the name of the King Edward VII. Memorial Laboratory, in acknowledgment of a substantial gift of money made to the league by British residents of Pittsburg in memory of the late King.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

A DIARY OF CONGRESSES.

WE shall publish this diary from time to time that our readers may have under their hands the dates of the approaching scientific Congresses. It is unnecessary to issue the lists of all these functions week by week, and we propose to make only such gatherings as will occur in the immediate future the subject of regular announcement. The following Congresses, Conferences, and Exhibitions are announced:—

April 26th–Nov. 5th (Ghent).—International Exhibition.
May 31st to October (London, Earl's Court).—Imperial Services Exhibition.
May–October (Leipzig).—First International Building Exhibition.
June–October (London, Crystal Palace).—Anglo-German Exhibition.
June 24th (opened) (London, 54a, Wigmore-street).—Historical Medical Museum. (Organised by Mr. Henry S. Wellcome.)
Aug. 6th–12th.—(London).—Seventeenth International Congress of Medicine.
" 20th–26th (Ghent).—Third International Congress of Neurology and Psychiatry.
" 25th–30th (Buffalo).—Fourth International Congress of School Hygiene.
" 31st–Sept. 7th (Antwerp).—Fourth International Congress for the Hygiene and Salubrity of Dwellings.
Sept. 2nd–6th (Groningen).—International Physiological Congress.
" 9th–13th (Vienna).—Second International Congress of Life Saving and Prevention of Accidents.
" 10th–17th (Birmingham).—British Association.
" 21st–26th (Vienna).—Eighty-fifth Meeting of German Natural Philosophers and Physicians.
" 22nd–28th (Milan).—Fourteenth International Anti-alcoholic Congress.
Oct. 28th–Nov. 1st (London, Royal Horticultural Hall).—Twenty-fourth Universal Cookery and Food Exhibition.
(London, Shepherd's Bush).—National Gas Exhibition.
(Chicago).—Congress of the International Association of Refrigeration.
(Washington).—Congress of American Physicians and Surgeons.

In 1914:—
April 14th–18th (New York).—Fourth Congress of the International Surgical Society.
May 1st–Nov. 1st (Lyons).—International Town Life Exhibition.
Aug. 10th–15th (St. Petersburg).—Twelfth International Congress of Ophthalmology.
Sept. 7th–12th (Berne).—International Congress for Neurology, Psychiatry, and Psychology.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial Staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, London, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will insure regularity in the despatch of their journals and an earlier delivery than the majority of Agents are able to effect.

THE COLONIAL AND FOREIGN EDITION (printed on thin paper) is published in time to catch the weekly Friday mails to all parts of the world.

The rates of subscriptions, post free from THE LANCET Offices, have been reduced, and are now as follows:—

FOR THE UNITED KINGDOM.		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

(The rate for the United Kingdom will apply also to Medical Subordinates in India whose rates of pay, including allowances, is less than Rs.50 per month.)

Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London County and Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied.

SOLE AGENTS FOR AMERICA—Messrs. WILLIAM WOOD AND CO., 51, Fifth Avenue, New York, U.S.A.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Aug. 6th, 1913.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
July 31	30·02	E.	...	116	76	56	58	60	Overcast
Aug. 1	30·17	N.E.	...	110	72	58	58	60	Overcast
" 2	30·28	E.	...	106	69	56	56	59	Overcast
" 3	30·27	E.	...	115	74	53	55	60	Cloudy
" 4	30·09	N.E.	...	127	67	54	56	59	Cloudy
" 5	30·08	N.E.	...	118	66	53	52	58	Fine
" 6	29·97	N.	...	109	65	55	54	59	Fine

The following journals, magazines, &c., have been received:—Journal of Hygiene, Journal of the Royal Sanitary Institute, Archives of the Roentgen Ray, Therapeutic Gazette, Ophthalmoscope, Tropical Diseases Bulletin, Journal of Obstetrics and Gynæcology of the British Empire, Liverpool Medico-Chirurgical Journal, La Clinique Infantile, South African Medical Record, Archiv für Schiffs- und Tropen-Hygiene, Archives Générales de Médecine Archives de Médecine et de Pharmacie Militaires, Annales de l'Institut Pasteur, Public Health, Journal of State Medicine, African World, Practitioner, Archives de Médecine et Pharmacie Navales, Child, Edinburgh Medical Journal, Maryland Medical Journal, Dominion Medical Monthly.

Communications, Letters, &c., have been received from—

A.—Mr. E. A. Armstrong, Lond.; Messrs. Claudius Ash, Sons, and Co., Lond.; Anglo-American Pharmaceutical Co., Croydon; Aberdeen University, Secretary of; *American Journal of Tropical Medicine*, New Orleans, Manager of; Ayrshire Sanatorium, Ayr, Clerk to the; Atlas Non-Puncture Inner Case Syndicate, Lond.; Mr. E. Arnold, Lond.; Messrs. Arnold and Sons, Lond.; Addenbrooke's Hospital, Cambridge, Secretary of; *Argus Suisse de la Presse*, Geneva; Mr. J. Astier, Paris; Sir W. Angus, Sanderson, and Co., Newcastle-on-Tyne.

B.—Dr. J. L. Bogle, Newbury; Dr. B. N. Burjorjee, Rangoon; Mr. C. A. G. Browne, Lond.; Messrs. Burroughs, Wellcome, and Co., Lond.; Sir Henry Burdett, Lond.; Mr. T. M. Bosanquet, Cleddon; Board of Agriculture and Fisheries, Lond.; Messrs. Charles Barker and Sons, Lond.; Dr. Dudley Buxton, Lond.; British Sales Agency, Lond.; Birkenhead Union, Clerk to the; Messrs. Butterworth and Co., Lond.; Mr. C. Birchall, Liverpool.

C.—Professor A. Chauffard, Paris; Cambridge University Press, Lond., Manager of; Professor F. R. Capriata, Licata; Messrs. J. and A. Churchill, Lond.; Dr. L. P. Colat, Pnom-penh; Dr. J. Cross, Birkenhead; Mr. H. A. Collins, Croydon; Miss Cotton, Glasgow; Messrs. Casein, Ltd., Lond.; Cambridge Scientific Instrument Co., Manager of; Dr. R. H. Clark, Warlingham.

D.—Dorland Agency, Lond.; Mr. A. Duncan, Glasgow; Dorset County Hospital, Dorchester, Secretary of; Dorset County Council, Dorchester, Clerk to the; Devon County Asylum, Exminster, Medical Superintendent of.

E.—Messrs. Ewart, Seymour, and Co., Lond.; Edinburgh Royal Infirmary, Clerk to the; Dr. John Eyre, Lond.; Emil. Chr. Hansen's Fund, Copenhagen, Secretary to; Mr. T. H. Engelmann, Westcliff; Mr. H. Elliot-Blake, Bognor; Mr. J. H. Evans, Lond.; Incorporated Edinburgh Dental Hospital and School.

F.—Hon. Edith Fitzgerald, Lond.; Mr. G. Finch, Rickmansworth; Dr. Forster, Embleton; Dr. W. B. Fielden, Birmingham; Mr. G. P. Forrester, Darmstadt; Mr. G. Fock, Leipzig; Factories, Chief Inspector of, Lond.

G.—Dr. J. Leslie Gordon, Caterham; Glasgow University, Secretary of; Glasgow Royal Infirmary, Superintendent of; Messrs. Gordon and Goteh, Lond.; Dr. A. Graham, Lond.

H.—Hastings Urban Sanitary Authority, Clerk to; Mr. K. Hirose, Okayama; Mr. John Hatton, Bath; Home Office, Lond., Private Secretary of; Dr. R. A. P. Hill, Peking; Dr. B. Hall, West Mersea; Dr. W. P. Herringham, Lond.; Dr. T. E. Hill, Durham.

I.—Dr. Y. Ibrahim, Minia.

J.—Dr. Norman Jeans, Lond.; Mr. A. Rocyn Jones, Lond.; Mr. W. Judd, Lond.; Mr. Charles G. Jarvis, Lond.

K.—Mr. C. T. Kingzett, Lond.; Professor Kynoch, St. Andrews; King's College Hospital Medical School, Lond., Secretary of; Kent County Asylum, Maidstone, Clerk to the; K. T. W.

L.—Dr. R. Bruce Low, Lond.; London Dermatological Society, President and Council of; Messrs. E. and S. Livingstone, Edinburgh; London School of Clinical Medicine, Dean of; Leeds Public Dispensary, Secretary of; Leeds University, Dean of; Lowestoft Hospital, Secretary of; London School of Tropical Medicine, Chairman, Committee, and Teaching Staff; Longlister; London County Council, Deputy Clerk of.

M.—Mr. D. C. McArthur, Taungs; Mr. R. Mosse, Prague; M. R.; Manchester Royal Eye Hospital, Secretary of; Mr. D. Mackenzie, Lond.; Messrs. Marlborough and Co., Lond.; Medical Sickness and Accident Society, Lond., Secretary of; Dr. J. C. McWalter, Dublin; Dr. A. Macdonald, Jamaica; Miss E. Miller, Lond.; Dr. William Macewen, Glasgow; Major O. St. J. Moses, I.M.S., Lond.; Dr. Victor J. McAllister, Dublin; Medical Insurance Committee, Lond., Agent and Secretary of; Manchester Corporation, Clerk of; Monmouthshire Asylum, Abergavenny, Clerk to the; Dr. F. H. Morison, Carlisle.

N.—Mr. H. Needes, Lond.; National Health Insurance Commissioners, Lond., Secretary to; National League for Physical Education and Improvement, Lond., Sec. of.

O.—Oxford County Asylum, Littlemore, Superintendent of; Dr. C. O'Gorman, Bourne End.

P.—Dr. Alex Porter, Didsbury; Mr. C. M. Page, Lond.; Dr. L. Phillips, Cairo; Messrs. Philip, Son, and Nephew, Liverpool; Prof. R. J. Pye-Smith, Sheffield; Mr. J. Inglis Parsons, Lond.; Dr. R. W. Powell, Ottawa; Captain Parkinson, R.A.M.C., Glasgow; Dr. G. Parker, Clifton; Mr. Herbert J. Paterson, Lond.

Q.—Queen Margaret College, Glasgow, Secretary of.

R.—Dr. S. Rideal, Lond.; Registrar-General for Ireland, Dublin; Dr. A. Roemmele, Paris; Messrs. Robertson and Scott, Edinburgh; Royal College of Surgeons in Ireland, Dublin, Registrar of; Dr. Charles Russ, Lond.; Dr. J. Crawford Renton, Glasgow; Mr. Frank A. Rogers, Lond.; Mr. O. Rothacker, Berlin; Messrs. E. J. Reid and Co., Lond.; Royal Halifax Infirmary, Secretary of; Mr. L. Rogers, Lond.; Royal National Hospital for Consumption, Ventnor, Board of Management of.

S.—Dr. J. Swift-Joly, Lond.; Dr. A. J. Smith, Barranquilla; Mr. H. K. Smyth, Selukwe; Dr. Charles Slater, Lond.; Mr. C. Somerset, St. Leonards-on-Sea; Fleet-Surgeon E. Sutton, R.N., Weymouth; S. G. S.; Smith's Advertising Agency, Lond.; Messrs. G. Street and Co., Lond.; Messrs. Slatter and Rose, Oxford; Messrs. Seed and Gabbutt, Blackburn; Sheffield Royal Hospital, Secretary of; St. Thomas's Hospital, Lond., Secretary of; Dr. J. P. Steele, Birkdale; Dr. E. G. Schlesinger, Lond.; Messrs. Spiers and Pond, Lond.; South Devon and East Cornwall Hospital, Plymouth, Secretary of; Messrs. Squire and Sons, Lond.; Messrs. Sherratt and Hughes, Manchester; Mr. N. B. Saw, Lond.; Smethwick County Borough, Town Clerk of; Dr. H. Oswald Smith, Sanderstead; Sunderland Royal Infirmary, Secretary of; South Shields County Borough, Clerk to the; Sheffield Corporation, Clerk to the; Mr. Theodor Steinkopff, Dresden; Dr. G. Herman Sieveking, Hamburg; St. Thomas's Hospital, Lond., President, Treasurer, Governors, and Staff of.

T.—Dr. G. L. Tuck, Lond.; Mr. J. Thompson, Taft, U.S.A.; Dr. F. B. Turck, New York; Dr. Stuart Tidey, Victoria, British Columbia; Mr. O. Polhill Turner, Hastings; Dr. H. Hyslop Thomson, Hertford; Mr. C. W. D. Townsend, Sheffield.

U.—University of London Press Manager of; Dr. J. W. Unsworth, Blackrod; University of London, Principal of.

V.—Dr. H. R. Vachell, Cardiff; Messrs. G. Van Wyk and Co., Lond.; Mr. O. Vevers, Norton.

W.—Dr. L. Waldstein, Tunbridge Wells; Captain C. F. White, R.A.M.C., Dublin; Mrs. Alfred Willett, Turner's Hill; H. White Manufacturing Co., Manchester; Messrs. J. A. Walbank and Co., Newcastle-on-Tyne; West Sussex County Council, Lewes, Clerk to the; Prof. A. D. Waller, Lond.; West Ham and Eastern General Hospital, Secretary of; Worcestershire County Council, Worcester, Clerk to the; Williams' Advertising Offices, Bradford; Dr. A. S. Woodwark, Lond.; Wolverhampton General Hospital, Secretary of; Whitehaven and West Cumberland Infirmary, Secretary of; Welsh Press Agency, Port Talbot.

Letters, each with enclosure, are also acknowledged from—

A.—Messrs. Allen and Hanburys, Lond.; Messrs. Adlard and Son, Lond.; Dr. I. Anderson, Lond.; A. L. A.; Mr. R. Aldous, Brenchley; Army and Navy Male Nurses' Co-operation, Lond.

B.—Bristol Myers Co., Brooklyn; Dr. W. Bainbridge, Makerston; Mr. R. Betts, Worthing; Messrs. Browne and Stevenson, Liverpool; Mr. W. G. Burcombe, Lincoln; Bootham Park Mental Hospital, York, Clerk to the; Birmingham General Hospital, Secretary of; Mr. J. A. Burke, Bury St. Edmunds; B. J. P. J.; Dr. D. Barjorjee, Karachi.

C.—Dr. G. W. Crile, Cleveland; Messrs. Corbyn, Stacey and Co., Lond.; Messrs. Cutting and Underwood, Lond.; Cheltenham General Hospital, Secretary of; Messrs. J. and A. Carter, Lond.; Messrs. Condy and Mitchell, Lond.

D.—Mr. A. B. Duprey, Brasso Piedra; Dorset County Council Education Committee, Dorchester, Accountant to the; Durham County Council, Durham, Clerk to the; Dalrymple House, Rickmansworth, Medical Superintendent of; Messrs. Dyer, Son, and Hilton, Lond.; Messrs. W. Dawson and Sons, Lond.; Dr. Herbert Davies, Hastings; Mr. S. F. D'Azevedo, Oporto; Mr. R. J. Dale, Mylor; Dindigul Taluk Board Office, India, Vice-President of.

E.—Messrs. Eason and Son, Dublin.

F.—Mr. A. Fleming, Lond.; Messrs. Frasers, Ipswich.

G.—Messrs. Gale and Co., Lond.; Galen Manufacturing Co., Lond.; Gloucestershire Royal Infirmary, Gloucester, Secretary of; Glasgow Royal Asylum, Clerk to the; Dr. A. E. Garrod, Lond.

H.—Hospital for Sick Children, Lond., Secretary of; Messrs. Hogg and Son, Lond.; Mr. G. J. Harris, Lydney; H. D.

J.—Mr. W. Jenkinson, Lond.; J. R. C.

K.—Dr. Kerr, Aberdare; K. W.; King Edward VII.'s Hospital, Cardiff, Secretary of; Miss King, Cambridge.

L.—Mr. T. S. Logan, Stone; Lister Institute of Preventive Medicine, Elstree; Liverpool Guardians, Clerk to the; Mr. O. Locker-Lampson, M.P., Lond.

M.—Dr. J. B. McKay, Newport; Manchester Hospital for Consumption, Secretary of; Messrs. Z. P. Maruya and Co., Tokyo; Manchester Royal Infirmary, Secretary of; Middlesbrough Corporation, Clerk to the; Mr. P. Lockhart Mummery, Lond.; Messrs. Maple and Co., Lond.; Mr. A. Macmillan, Lyminge; Dr. Z. Mennell, Lond.; Mrs. Myers, Birmingham.

N.—Mr. R. B. Nelson, Northampton; Dr. Neil, Oxford; Nottingham General Dispensary, Secretary of; Mr. B. Nicol, Durham.

O.—Mr. E. H. B. Oram, Bromley.

P.—Mr. A. H. Priestley, Norwich.

Q.—Queen's Hospital, Birmingham, Treasurer to the.

R.—Messrs. Roberts and Co., Lond.; Messrs. Robinson and Sons, Chesterfield; Registered Nurses' Society, Lond., Secretary of; Mr. H. Powell Rees, Lond.; Royal South Hants and Southampton Hospital, Secretary of; Miss H. Ruttledge, Holymount; Rotherham Hospital, Secretary of; Randall's Advertising Agency, Liverpool; R. S.; Miss Rattray, Haslemere; Mr. D. Rosser, Swansea.

S.—St. Mary's Hospital for Women and Children, Lond., Secretary of; St. Andrew's Hospital, Northampton, Clerk to the; Messrs. Saward, Baker, and Co., Lond.; St. Andrew's Hospital, Lond., Secretary of; St. Peter's Hospital for Stone, Lond., Secretary of; Dr. S. J. Steward, Bognor; St. Mary's Hospitals, Manchester, Secretary of; St. John Ambulance Association, Lond., Secretary of; Messrs. W. H. Smith and Son, Lond.; Swansea General Hospital, Secretary of; Mr. B. C. Sinha, Nangachia.

T.—Dr. J. W. Thomson, Wakefield; Messrs. Thacker and Co., Lond.

V.—Messrs. Van Houten, Lond.

W.—Wigan Infirmary, Secretary of; West Sussex County Council, Chichester, Treasurer to the; Dr. J. L. Walker, Manchester; Whittingham Asylum, Preston, Clerk to the; W. L. M.; Woolwich Corporation, Treasurer to the; Mrs. Willett, Turner's Hill; Dr. W. W. Wells, Lond.

EVERY FRIDAY. **THE LANCET.** PRICE SIXPENCE.

SUBSCRIPTION, POST FREE.

FOR THE UNITED KINGDOM.*		TO THE COLONIES AND ABROAD.	
One Year	£1 1 0	One Year	£1 5 0
Six Months	0 12 6	Six Months	0 14 0
Three Months	0 6 6	Three Months	0 7 0

* *The same rate applies to Medical Subordinates in India.*

Subscriptions (which may commence at any time) are payable in advance.

ADVERTISING.

Books and Publications	Five Lines and under £0 4 0
Official and General Announcements	
Trade and Miscellaneous Advertisements and Situations Vacant ...	Every additional Line 0 0 6
Situations wanted: First 30 words, 2s. 6d.; per additional 8 words, 6d.	
Quarter Page, £1 10s. Half a Page, £2 15s. An Entire Page, £5 5s.	
Special Terms for Position Pages.	

Cheques and Post Office Orders (crossed "London County & Westminster Bank, Covent Garden Branch") should be made payable to the Manager, Mr. CHARLES GOOD, THE LANCET Office, 423, Strand, London, to whom all letters relating to Advertisements or Subscriptions should be addressed.